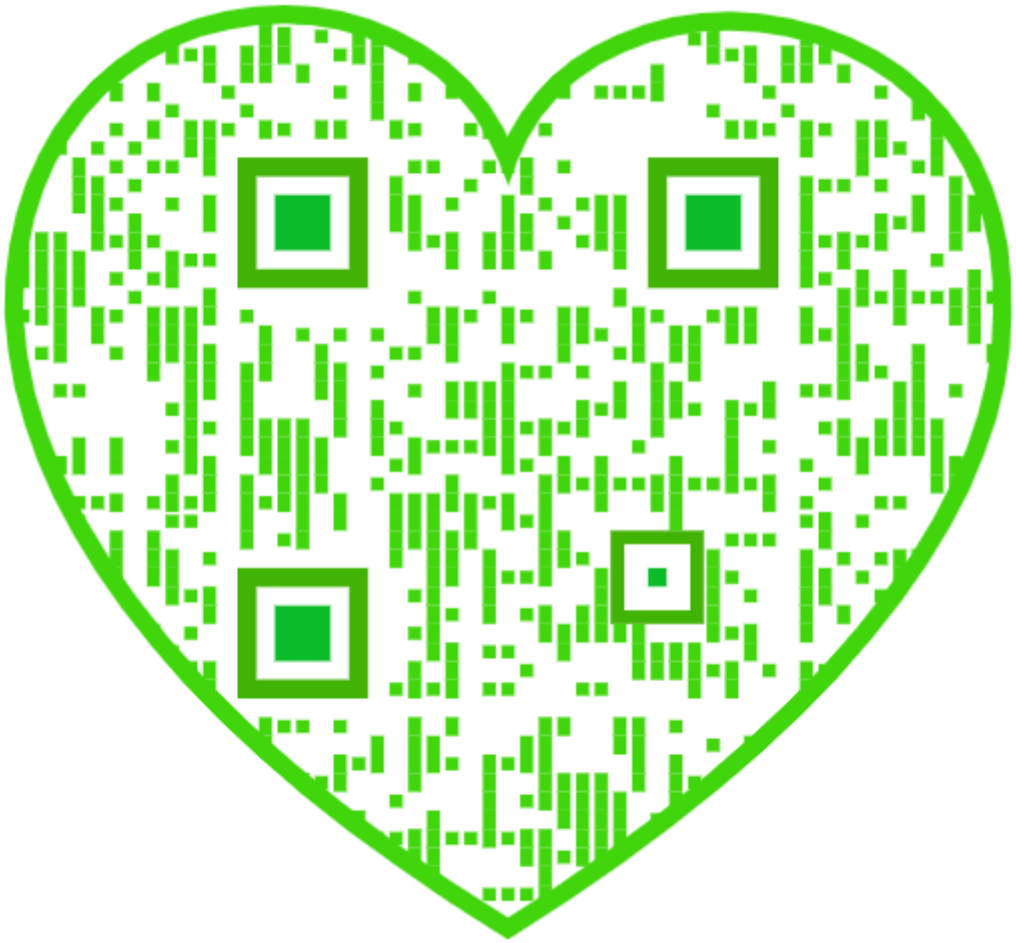
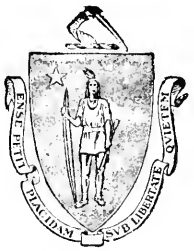
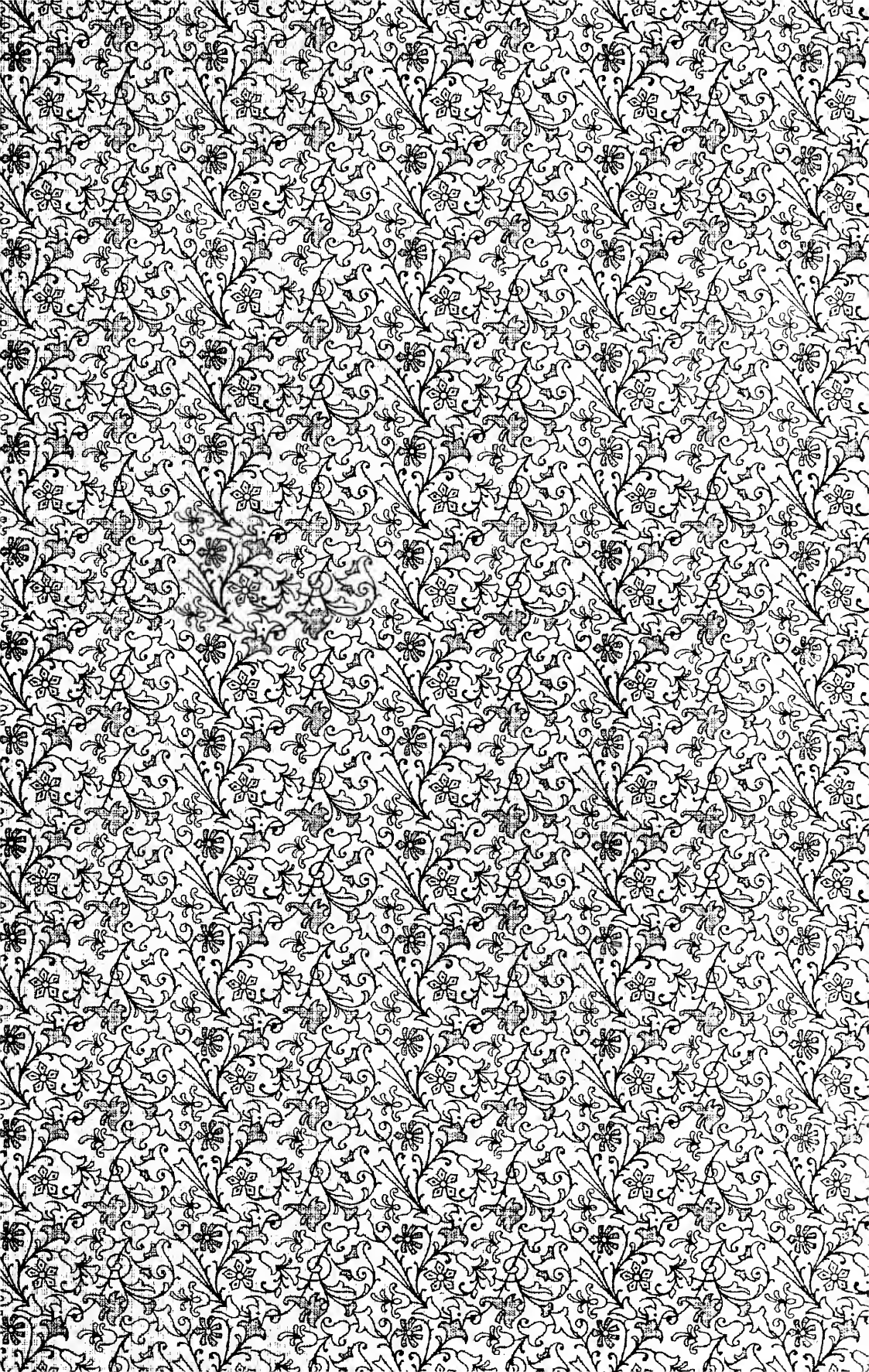
UMASS/AMHERST
312066 0333 3309 0



LIBRARY
OF THE


MASSACHUSETTS
AGRICULTURAL
COLLEGE

SOURCE



THE

British Bee Journal,

AND BEE-KEEPERS' ADVISER.

EDITED BY

THOMAS WM. COWAN, F.G.S., F.L.S., F.R.M.S., &c.,

AND

W. HERROD, F.E.S.

VOLUME XLI.

JANUARY-DECEMBER, 1913.

PUBLISHED BY

SIMPKIN, MARSHALL, HAMILTON, KENT, & CO., LIMITED,

32-36, PATERNOSTER ROW, E.C.

LIBRARY
UNIVERSITY OF
MASSACHUSETTS
AMHERST, MASS.

L. UPCOTT GILL & SON LTD.,
LONDON & COUNTY PRINTING WORKS
DRURY LANE LONDON. W.C.

THE

British Bee Journal

No. 1593. Vol. XLI. N.S. 1201.] JANUARY 2, 1913. [*Published Weekly.*

VOLUME FORTY ONE.

Another year has gone since we addressed our readers in the first number for 1912, and we are now entering upon the new year, 1913—the forty-first of the existence of "Our Journal." In commencing a new volume one is almost at a loss to say anything that has not been said already, for an annual address must necessarily be made up of similar material year after year. It is a great satisfaction to us, to realise that the journal has now attained the venerable age of forty years, and that it has appeared regularly every week for the last twenty-six years. No other bee paper has been able to do so, for as a matter of fact, our journal is, and has been for many years, the only weekly bee paper in the world.

So far as the "B.B.J." is concerned, the retrospect to us as editors is thoroughly satisfactory, for we can point to its work and teaching, that it has continued to be progressive, practical and sound. The number of questions replied to every week shows to what extent our advice has been sought, and it has always given us pleasure to be of assistance to bee-keepers in any of their difficulties.

The past year can in no wise be compared with the Coronation year which preceded it, when, the honey harvest was not only plentiful, but remarkable for the uniform absence of honey-dew. The early part of last season opened well, and bee-keepers were hoping for a repetition of the experience in 1911. Their hopes, however, were not realised, for although in some places supers were being rapidly filled in May, a sudden break in the fine spell put a stop to further work, and for the rest of the summer bees had to struggle for existence, for, with difficulty were they able to collect sufficient for their own requirements, and many stocks had to be fed to keep them alive. The season was also unfavourable for bee diseases, and we regret to have to record that there are districts where what has been known as "Isle of Wight" disease is still causing serious losses. Considerable progress has been made with the investigations instituted by the Board of Agriculture and Fisheries, and very full reports have been made by Dr. Graham-Smith and his colleagues, which show the cause of this disease. In our last year's retrospect we pointed out that the spread of the malady emphasised the necessity for legislation, and that the Committee appointed by the B.B.K.A. had made considerable progress with respect to the Bill which it was hoped would be satisfactory to bee-keepers. The Government has also realised this necessity and after a conference held at the Board of Agriculture on March 12th, which the Chairman and Secretary of the B.B.K.A. attended, and a common basis of agreement was arrived at, a Bill was submitted to the President of the Board of Agriculture. On July 26th, Mr. Runciman introduced in the House of Commons a "Bill to provide for dealing with Bee diseases," which passed the second reading on October 16th, when it met with a very favourable reception, and there is every prospect of it shortly becoming an Act.

During the year, the Experimental and Educational Apiary of the B.B.K.A. was established at the Zoological Gardens in London, and has already attracted a good deal of attention. In the summer 18 lectures, *i.e.*, three courses of six lectures in each course, with practical demonstrations, were given at the apiary. Only twelve students could be admitted to each course, and it is satisfactory to know that so eager is the desire to learn bee-keeping that there were many more applicants than could be accommodated. The B.B.K.A. lecturer also gave six popular lectures with demonstrations, at the apiary in the presence of a large number of visitors to the gardens. Six indoor lectures, illustrated with lantern pictures were given in the lecture hall of the Zoological Society, during the last three months of the year, and were well attended. The second winter course will be given in January and February of this year. There is practically no limit to the number of students who can be admitted to these lectures, for which no payment is required.

Special lectures have been given by the B.B.K.A. lecturer in Devonshire, Leicester, Kent, Herts, Suffolk, Aberdeen and Inverness, the average attendance being 200. The B.B.K.A. has been able to give this assistance to its affiliated Associations, as a result of the Grant obtained from the Development Fund. Two lectures by specialists have also been given in London, one by Mr. F. W. L. Sladen, F.E.S., on "Mendelian Methods applied to Apiculture," and the other by Mr. R. J. Tabor, B.Sc., of the Royal College of Science, on "Fertilisation of Flowers." Over 150

SEP 23 1915

attended at each of these lectures, which were greatly appreciated.

It is satisfactory to find that the representatives of affiliated associations attend the Council meetings in increasing numbers, and are thus enabled to co-operate with the parent Association in promoting the welfare of the industry. There are now forty-five associations in affiliation with the B.B.K.A., the largest number since its inception.

The conversazione (which are now held in the lecture hall of the Zoological Society) attracted a large number of bee-keepers. Papers were read by Captain Sitwell on "Heather Honey," by Mr. D. M. Macdonald on "Forty Years of Apicultural Progress," and by Miss M. Dagmar Sillar on "Bee-keeping in South Africa." The discussions which followed were instructive and of a high standard, and it was evident that the interest was being maintained, for over 150 members attended the last conversazione.

The principal additions to bee literature have been "The Humble Bee and How to Domesticate it," by F. W. L. Sladen, F.E.S., "Producing, Preparing, Exhibiting and Judging Bee Produce," by W. Herrod, F.E.S., "Bees shown to the Children," by E. Hawkes, "Cause of European Foul Brood," by Dr. G. N. White, "La Tunisie Apicole" by J. George, and the Catalogue of the B.B.K.A. library.

Among the most notable of those who have passed away during the year we may mention Mr. W. McNally, who was one of the leading Scotch bee-keepers, and a regular contributor to our *Record*, and Mr. W. B. Tegetmeier. Abroad the most notable losses were those of Mr. J. B. Hall in Canada, Mr. James Heddon in the United States of America, and M. Bernhard Reitsche in Germany.

We intend to continue from time to time the articles on Pollen by Mr. Hayes, which have been so much appreciated, and also the "Helpful Hints to Novices," by our junior editor, the value of whose articles has been enhanced by the numerous illustrations which have accompanied them. We will spare neither time nor expense in making the "B.B.J." useful, as our aim is to keep bee-keepers in touch with everything important that goes on in every part of the world. The numerous pictures in our columns tell their own story, and it is our intention to make a liberal use of this attractive method of imparting information during the present year.

While thanking those who have assisted us in making the "B.B.J." instructive and interesting, we invite others who have hitherto not contributed anything to its columns, to do so now. It is only by exchange of views with the most successful workers that intelligent progress can be made. We also thank those who have sent us letters of appreciation, and can assure them that they are an encouragement to still further effort on our part, and if the senders do not find their letters printed in the journal it is not because we do not value them, but simply from the lack of space which we think can be more profitably devoted for the good of the industry.

In conclusion, while hoping that 1913 may be a better honey year for bee-keepers than the one just closed, and that the progress and advance made in the industry will be maintained, we wish our readers a very Happy New Year.

AMONG THE BEES.

By D. M. Macdonald, Banff.

MODERN ADVANCE.

Even a very few years ago the idea that bee-keeping would form a part of the curriculum in our schools and colleges would have been scouted as a mere chimera. To-day we have it as a branch of study in many of our elementary schools, our higher grade schools, and in our agricultural colleges. For some time Glasgow has had a Lecturer on Bee-keeping, Edinburgh has two, and now Aberdeen is falling into line, and the Governors have decided to appoint an Instructor. Thus every part of Scotland will be covered from John o' Groat's to Mull of Galloway. Hitherto England has taken the lead, principally by the liberality of County Council grants, a thing unknown in Scotland, so far as I know. The touring expert, too, has hitherto been a stranger in our land, consequently we have a heavy leeway to make up. This sometimes much-abused official is a power for good in apiculture, and it will be found that where disease is most rampant, where honey is sold about one-third below the market price, and where old-world devices are practised, is just where these enlightened pioneers are unknown. The Development Grant for an experimental apiary is a distinct step in advance, and, in course of time, the balance of that grant will aid largely in advancing the most modern methods. I count this as only the beginning of still further favours yet to come in aid of progressive bee-keeping.

Immunity.—It is at times claimed that certain races of bees are more immune in the way of escaping from disease than others, and the claim is often made that Italians are especially immune in this respect. Now, it has been found in Switzerland that Italians, instead of being so, are more subject to foul brood and suffer more from its ravages than the native race, and

statistics prove indisputably that in the southern part of the Republic, where this race only is kept, that *there* disease is rifest. The worst, most rotten, and foulest smelling combs I ever encountered were in a hive of pure Italians, the queen of which was imported from Italy direct. In the report on "Isle of Wight" disease we read: "From the accounts we receive we are able to state that immunity does not seem to be correlated to colour or race, since yellow, leather-coloured, black, and hybrid bees are reported to have escaped the disease in different districts." My own bees were about as black as they can be got nowadays. They went under! A keen correspondent last year wrote me that they did so just because they were blacks. In his own apiary he had bees of all types, and he thought the yellower they were the more certain they were to resist infection. Alas! This year he found the yellowest affected equally with the blackest, and the yellows went under first. Whatever the race may be the real explanation lies in vigour and longevity. The vigorous stock has more stamina, more staying power, breeds better, and dies hardest.

So-called Cures.—A South of Scotland bee-keeper who delights in calling a spade a spade, wrote me recently expressing his pleasure in reading my article in the BRITISH BEE JOURNAL of November 7th and he ended: "I look on sellers of cures as a species of robber." That is not quite my view. I recognise that they are honest men, according to their lights, and I believe they have faith in what they advertise. Still, I think it is time that a jury of experts, under the aegis of the B.B.K.A., should investigate and report on the efficacy of the so-called cures. Amateur doctors are at best imperfectly qualified to deal with drugs, and a mixture of several ingredients, as these "cures" are, is so difficult to bring to an exact degree of strength, that just a little more or a little less means either killing or *not* curing. Without any stretch of faith, I am prepared to accept advertised cures as being real *bona fide germicides*. They do kill bacteria, and inasmuch as they accomplish this purpose they are quasi-cures. They do work for good—to a certain extent at least—but they just fail to *cure*. That is my experience. It is easy to perceive why. A diseased stock suffering from "Isle of Wight" disease has gone through a period of incubating the disease. The application of a so-called cure, when the trouble is first perceived, may act in two ways. It may kill a certain percentage of germs in the part of the hive where the application is of sufficient strength, and if still stronger, it may help to rid the stock of at least some of the sickly workers, far gone, who evict themselves from the hive. All germs, however, are not killed, neither do all affected bees leave the brood body. Hence disease remains either active or latent. The bees going out carry it with them to infect others, therefore they not only breed the disease inside from the germs and spores located there, but act as disease carriers to spread it to other stocks. Drugs of sufficient strength to kill these spores will almost to a certainty kill the bees. One thing is certain beyond dispute. A bee affected never recovers, because, owing to the rapid increase of the protozoa, the intestinal lining becomes riddled, and the intestinal tract being thus unable to accomplish its duties, the bee cannot fail to die. It is a misuse of words to speak of curing bees; what might kill the parasite would kill the bee. Since such a stock (even if mildly infected) is a continual and serious source of danger, it ought to be destroyed. I have high authority for my contention in the following extract:—"Considering the nature of the causative agent, it is exceedingly improbable that any of the drugs will be found to be of value." Dr. Graham-Smith also considers that drugs in doses fatal to the parasite would prove an insuperable difficulty in a beehive." Smaller doses are unsuitable, for it is found that they result in some cases in the evolution of a drug-proof parasite." That last sentence is a very suggestive one.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

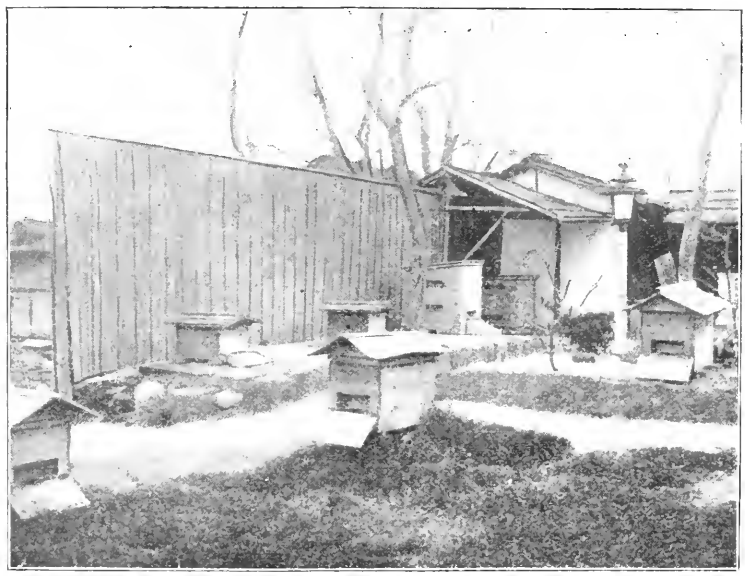
FOUL-BROOD LEGISLATION IN CANADA.

[8626] I have been watching with a great deal of interest the effort put forth on the part of the British Bee-keepers' Association to secure legislation with reference to the check and eradication of foul brood. I am somewhat surprised to see the opposition which is being made by so many of your bee-keepers. It seems particularly strange that one having so many colonies of bees as Mr. C. B. Bartlett "B.B.J.," December 5th (page 483), should be opposed to legislation, but when I note that he speaks of the use of skeps or fixed comb-hives as being "the most reasonable and the most profitable form of bee-keeping," the wonder at his opposition is changed to astonishment at the backwardness of one who is extensively engaged in bee-keeping.

We have been through the mill pretty much in this respect in Ontario, and are coming out on the bright side of the situation. The time was when the inspector of apiaries would be met at the gate with a shot-gun or savage dog, now the majority of bee-keepers are offended if the inspector passes their gate without giving them a call. The most serious complaints that we receive with reference to our inspection work are from bee-keepers who would like to have their bees inspected and have not as yet been visited by our inspectors. Box-hives or immovable comb-hives are with us almost a thing of the past and European foul brood is finishing the rest of them in territories, where they still exist. There is a section in our Act which gives the inspector authority to order the transferring of all bees into movable comb-hives and to destroy all such that are not transferred on the next visit.

Wishing you all success in your struggle against the greatest enemy to all bee-keepers.

MORLEY PETTIT, Provincial Apiarist, Ontario Agricultural College, Guelph, Canada.



A CORNER OF MR. TAMURA'S APIARY.

ENEMIES OF BEES.

THE SPIDER (*Thomisus onustus*).

[8627] We British bee-keepers are luckier than some others in the matter of bee-enemies, which are more varied and numerous in warmer countries. Spiders are rather troublesome sometimes, but we can find them at home and pull down their webs. A particularly nasty spider of the hunting kind is described in "The Life of the Spider," just compiled from the writings of that wonderful observer, J. H. Fabre.

Its scientific name is *Thomisus onustus*. Fabre calls it the Crab Spider, because it walks sideways. It is of a chilly nature, not living north of the land of olives, where its favourite and almost exclusive flower is the white-leaved rockrose. (How our own bees love the rockrose, or helianthemum, as the gardeners call it, and what glorious lumps of pollen they get from it in May!)

"*Thomisus*," says M. Fabre, "is passionately addicted to the pursuit of the Domestic Bee . . . The bee appears, seeking no quarrel, intent upon plunder. She tests the flowers with her tongue; she selects a spot that will yield a good return. Soon she is wrapped up in her harvesting. While she is filling her baskets and distending her crop, the *Thomisus*, that bandit lurking under cover of the flowers, creeps round behind the bustling insect, steals up close and, with a sudden rush, nabs her in the nape of the neck. In vain the bee protests and darts her sting at random: the assailant does not let go. Besides, the bite in the neck is paralysing, because the cervical nerve-centres are affected. The poor thing's legs stiffen, and all is over in a second. The murderess now sucks the victim's blood at her ease and, when she has done, scornfully flings the drained

corpse aside. She hides herself once more, ready to bleed a second gleaner should the occasion offer."

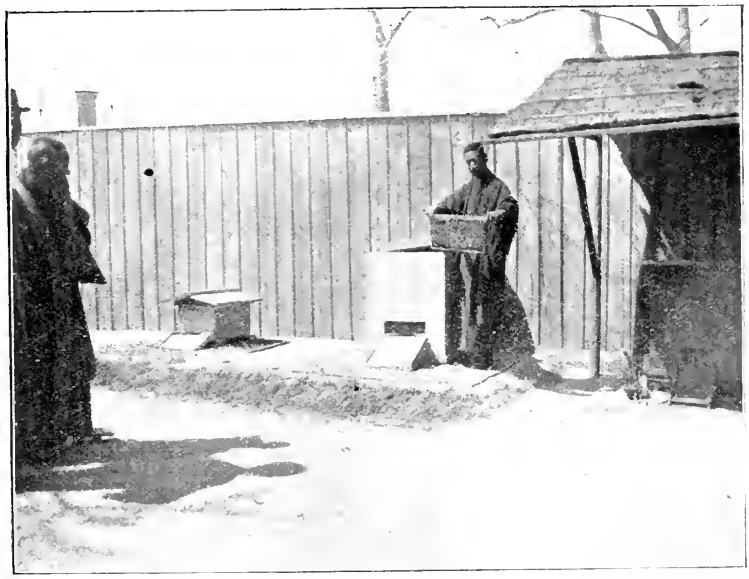
"This slaughter of the bee engaged in the delights of labour," continues M. Fabre, "has always revolted me." To which your readers will add, "Hear, hear."—G. R. D., Glos.

BEE-KEEPING IN JAPAN.

[8628] On my return home from our trip round the world, I intended to send you at once a few lines regarding a call made upon Mr. S. Tamura, at Chiojima, in the suburbs of the fine and most interesting town of Kioto, the old capital of Japan, and former residence of the Mikado; but after so long an absence, there was so much to see to that I could not find the opportunity, and therefore months passed and intentions remained intentions!

It was on the 1st of April of this year (1912) that my wife and myself visited Mr. Tamura's apiarian establishment, and although I do not speak Japanese, and he did not speak any European language except a few words of English, we were hospitably received and shown all over the apiary. I was allowed to take some photographs (of which I enclose two specimens) and we understood each other very well. Mr. Tamura has all his bees in hives of American pattern, he keeps only Italian and Carniolan bees, and was apparently very pleased when I remarked, "These Italian, these Carniolan bees! Have you no Japanese bees?" He shook his head and said, "No good." After we had visited the whole yard with its numerous hives, and the well furnished factory of all sorts of bee appliances of the best possible workmanship, he showed us a little house decorated with pictures and diplomas. I saw between others the portrait of Langstroth, and in a glazed frame the illustration of Mr. Tamura's apiary printed in the BRITISH BEE JOURNAL of April 1st, 1909. When we had seen all and had a cup of tea and some sweets, Mr. Tamura made me a present of two glasses of his extracted honey, of very light colour, and of exceedingly sweet taste, perfumed I don't know from what sources, of good density; reaching, certainly, a high grade of Japanese quality. At last we took our leave from our friendly host, well pleased with all we had seen. In Kobe I got a translation from a Japanese newspaper about a large Congress of Bee-Keepers, held in Gifu on the 23rd March, where about 700 delegates from Gifu, Wakajama, Hiroshima, Nagasaki, Saga, Ehime, Kagawa, Kanazawa, Nichi, and Miye met, with Nawa Umekichi as president. The programme for discussion at the meeting was as follows:—

1. Methods to be found for the promulgation of bee-keeping.
2. The necessity of uniformity in the measurements of hives and frames.
3. The proposal to petition the Government to establish a National Bee-Farm.
4. Study of plants profitable for bee-keeping.
5. Export of honey.



JAPANESE BEE-KEEPER MANIPULATING MODERN HIVE.

The following resolution was carried: "A memorial to be directed to the Government, in which the importation of a good race of bees is asked for, which should be largely bred in Japan and distributed over all the country, so as to get a uniform and good race of bees all over Japan."

This shows the progress Japan has made in bee-keeping, and as it is pretty sure that the Japanese Government will accede to this proposal, the time will not be far distant when Japan will have what it wishes.

We had no other opportunity to see bee-keepers in Japan, nor on our way home over America, where we saw, however, lots of apiaries from the railway.—ALEX. SCHRODER, Trieste.

[The article (in "B.B.J.," April 1st, 1909) referred to by Mr. Schroder was written by Mr. T. B. Blow, and he mentions the small size of the hives used by Mr. Tamura, and also that the native bees (then kept solely by him) were not good gatherers. In the few years that have elapsed since that time Mr. Tamura has introduced Carniolan and Italian bees, and "scrapped" the small native hives, replacing them with those of American type. This is an instance of the astonishing progress being made by the Japanese in every branch of industry. We remember recently seeing in one of the American bee papers a capital photograph of the 700 bee-keepers at the Convention referred to by Mr. Schroder and thought at the time how enthusiastic the Japanese were in comparison with ourselves, when we consider 150 a good attendance at the B.B.K.A. Conversazione.—EDS.]

MR. S. TAMURA'S APIARY FOUR YEARS AGO. (*More picturesque but not so profitable.*)

THE COMPOUND EYE OF THE BEE.

[8629] In reference to Mr. W. Hampton's letter on the "Compound Eye of the Bee," page 494 of "B.B.J.," December 12th, is not your correspondent overlooking the fact that the eyes are but the "windows" of the mind, and as such are simply capable of transmitting and not retaining the impressions of the various objects viewed?

Further, unless the separate eyes, which go to make up the compound eyes of the bee were capable of independent action, how would it be possible for it to obtain the "miniature photographs in a given order on the facets," and in addition, no more objects would have to be impressed upon these facets than the total number of these possessed by the bee, otherwise confusion would result, and the object would be defeated, inasmuch as no single and true impression would exist.

Again, the rule throughout Nature is that although the organs of sight are in pairs, yet one vision or compound picture is the result. Now, if the registration of these successive photographs or impressions on the facets obtained, those on the left side would of necessity be totally different to those on the right, and this would cause the bee to have to make occasional and somewhat lengthy stops to study his "chart," and to ascertain his

whereabouts. Again, unless the true focus was obtained, to get which the bee would require to adjust its position and distance from each successive object, many of the impressions would be blurred and indistinct, and I can well imagine the bee losing its way home in consequence.

We have an analogy in the case of the homing pigeon. In the latter case there are no compound eyes upon which to impress successive landmarks, yet the bird will travel many miles and yet return safely. As yet we can but describe it as "instinct," and which, doubtless, has its root and origin in the brain and nerve centres, which latter, in such cases, would seem to be specially adapted to the needs of the particular creature. These receive the various impressions through the organs of sight. As in the case of the human mind, impressions may, if desired, be allowed to dim or to become obliterated.

In the case of the swarm, is it not possible for the bee, which we know possesses intelligence as distinct from instinct to be capable of distinguishing between the old and the new home. This is my impression.—J. W. M., Withernsea.

[8630] Mr. Will Hampton's theory in "B.B.J.," December 12th (page 494), seems rather startling, but I do not think that on reflection he will stand up to it. Does he contend that the "miniature photos" on the facets of the compound eye are essentially different, except in size and number from the photo on the retina of our eyes, by means of which we find our way about? And does he say that they differ in any material way from the photograph set up by the exposure of the simple eye to the object near home and inside the hive? In what way is this same compound photographic apparatus of use to the bluebottle fly, the dragon-fly and the other thousands of insects that possess it but have no need to remember routes?

I would agree instanter to the proposition that the simple eye and the compound have different functions and on the lines suggested by Mr. Hampton. The compound eye is probably of no use, except for seeing objects in rapid motion (including, of course, fixed objects set in relative motion by the flight of the observer). The simple eye (our own for example) is distressed by the very rapid motion of objects. The hedges as seen from a railway train appear all in streaks, and the effort to see them soon makes the head ache. The experiment Mr. Hampton should make would be in the direction of a compound-eye field-glass to be used upon rapidly moving objects. All the owners of compound eyes are very rapid fliers, though it occurs to me that birds fly still more quickly, and have only simple eyes. But the bird has not two kinds of eye, and no bird has an eye as small as that of the insect. The bird's eye is, no doubt, a good all-round instrument, but the bee, having separate eyes for separate work, has probably the very best eye for sizing up a rapidly-moving landscape, seing all round the objects it encounters on the wing, and thus recognising a landmark from the east when we would declare she had only looked at it from the west. I do not see the need for any special photographic theory.—G. G. Desmond, Sheepscombe, Glos.

BLURTS FROM A SCRATCHY PEN.

[8631] *Old Bee Journals.*—It is very unfortunate, seeing that now there is no means of replacing them, that John Walton, of the Honey Cot, Weston, Leamington, should have mislaid, or perhaps rather been a little careless of his earlier copies of the Bee Journal. Possibly there is some blame to be attached to the binders, for Nos. 3, 4, and 5 are somewhat mixed and not at all successive. Therefore I am compelled to group the lot together and extract from the total. Is there anyone of the numerous readers of the Journal, who has these earlier numbers, who is willing to hand them to the care of the librarian of the Association? When the bee-enthusiast, full of years (as is the case with so many) has hived his last swarm, stored his last super, and gone to that haven of rest, which is the promised reward of a peaceful and industrious life, then, it often happens, that the books and journals which were so valuable to him, are but as so much waste paper to his executors, and heirs. But should he have any of these ancient records or any rare bee-books, they will find an honoured home on the shelves of the B.B.K.A. Library.

Anno Domini 1873 would seem to have been a year of famine, for in July the Conductor, writing, moans over "the miserably wretched weather of the last three months, many hundreds of stocks are in a state of starvation, and many are dead." Labour troubles too, seem to have been rife that year, for he receives numerous letters complaining that the bees will not work, will not ascend to the supers as they should do, are "on strike." One correspondent (I hope the sin will not be charged against him, but rather to the awkwardness of the season) has the impudence to annex one of Mr. Punch's worst jokes. "Comb Mes-dames bees, behive yourselves."

I suppose in those early days, there was difficulty in providing "copy," so the wise Conductor set his correspondents to work, arguing the merits and demerits of the Stewarton, the Carr-Stewarton, the Woodbury, the Pettigrew, and half a score of other hives. 'Cute, was it not. We the

wise men of later years, prophets because we know, are apt to think of all these pros and cons as ink wastefully slung. Long ago we decided that the "W.B.C." was the best hive, and the "Standard" frame the perfection for British use. But has not the Foul Brood Legislation taken the place of the hive controversy, and inkslinging is just as vigorous as ever?

And yet even in this interminable controversy there is something interesting and amusing. For instance, we have the "Pettigrew" glass super, shaped like a goblet. Through the stem is a hole, and up this the bees climb into the bowl above (diameter of hole 3in. to 4in.). I wonder if any of these supers survive? It would be a decided novelty to have one exhibited, say, at the next Groceries Exhibition. "They are made to hold from 12lb. to 16lb.," and "when filled, form a very ornamental acquisition to the breakfast or tea table." No doubt. But *tempora mutantur* and men with them; we much prefer now a pound section. It is more get-at-able. Then there is a "Renfrewshire Bee-Keeper," who totally contradicts a "Lanarkshire Bee-Keeper." "When Scot meets Scot, then comes the tug-of-war," and all about a Scotch hive, too, the Stewarton. But there is a well-known proverb, that when gentlemen, whose honesty is not absolutely above suspicion, quarrel, then the good and true get their reward. And so it proves in this instance, for stirring up the troubled waters only brings to the surface sundry historical truths, as instance, that "John Rusden, an apothecary and bee-master to the King's most Excellent Majesty James II.," granted and sold licences on behalf of John Geddie, who obtained a patent for his "Octagon Storified Hives." But this same John Rusden admits in the "Epistle Dedicatory," to his quaint "old work on a 'Full Discovery of Bees,' published in 1687, that the 'Transparent Hives,' were first shown to us by Dr. Wilkins, late Bishop of Chester." Having a window back and front, they were called "Transparent Hives." An extract from this John Rusden's book is also interesting: "The height of the hive is ten inches from the top to the bottom on the outside, and sixteen over from outside to outside—with a sliding shutter to run easily in a groove in the middle of the top to cover a hole 5in. square in the middle of the top—also are two large glass windows one before and one behind with doors to cover, *also a frame in the inside made fast with four pins for the bees to fix their combs upon.*

Mumm, Dzierżon, Wildman, Langstroth! Now must you all take a back seat? Here is John Rusden "Apothecary and Bee-Master, &c., &c., to the King," using a frame hive *centuries* before you had worked out the idea. "Is there anything new under the sun?"

One more "wrinkle." It recalls to me the days of my youth before I smoked my first cigar. Well do I remember even now the hour and the place of my agony. "Alpha" writes "About fumigation, I succeeded by a very simple apparatus consisting of a piece of thick cane lit at one end, blowing through the other, the smoke may be directed where you please." I did not blow the smoke out. I drew it in. That was all the difference when I tried with a piece of cane to inoculate myself to smoking.—J. Smallwood.

RAVAGES OF WAX MOTH.

[8632] I forward a photograph taken last September of a hive belonging to a friend of mine, which clearly shows the havoc wrought by the wax moth. The stock had not been examined for about a month, during which time hundreds of eggs of the moth must have hatched out with the result depicted. Some frames are completely eaten up, whilst others are covered with cocoons, grubs, etc. As a reader of "B.B.J.," I thought perhaps it would be interesting enough to publish. —E. F. B., Louth.

W. BROUGHTON CARR MEMORIAL FUND.

	£	s.	d.
Amount already acknowledged...	11	0	10
H. H. Pelham.....	0	5	0
Miss D. Burder.....	0	3	0
J. Cunningham	0	2	6
Sale of volt meter from "A Village Cobbler".....	0	2	0
J. R. Truss	0	1	0
	£11	14	4

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Old Bee Journalism (p. 485).—Friend Smallwood falls foul of Charles Nash Abbott, now unable to reply, alas! for his assumption of the title of Bee-Master. And here he falls foul of still smaller fry, for of all the titles of the craft it is the one which entitles to the greatest respect, and to which real bee-men, not merely arm-chair critics like myself, most aspire. Bee-Master! Does it not imply a real practical acquaintance with bees, and not merely a facility for passing set examinations? After all "Master" is a relative term, relative to the achievement of others as well as to the controlability of the object. Would Mr. Smallwood deny their degree to the horse-master, the flock-master, the ship-master, to the writer, the painter, the mason, on the ground that their work was not perfect, or their mastery complete? What, after all, do

we more than put a little harness upon the forces we profess to control? He does not suggest what lower designation the bee-keeper should arrogate to his office, whilst a little further on he criticises Mr. Abbott, somewhat inconsistently it appears, for his modesty! It is well to remember that the position of the craft in Mr. Abbott's day was very different from its position to-day, and that much of the difference is due to the BEE JOURNAL, which had such tentative beginning.

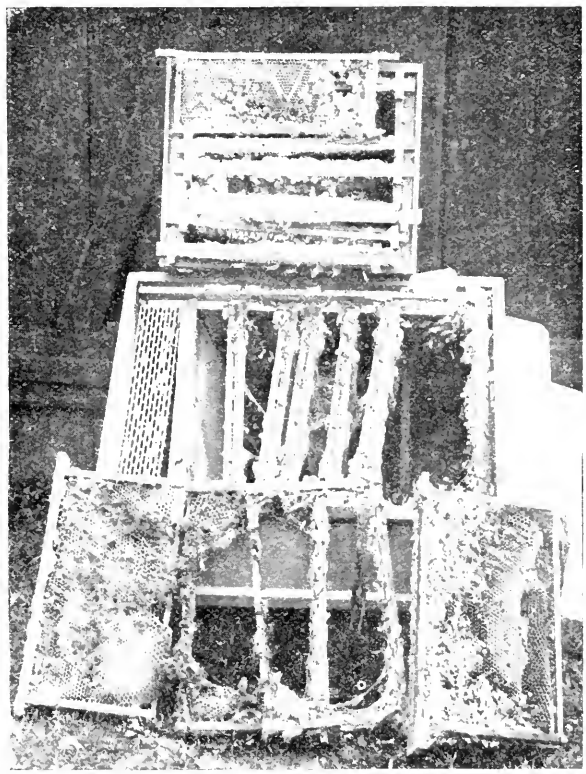
Subduing Bees (p. 488).—This is really an article in favour of corrugated paper as a fuel, but I have not found it to be all that "Somerset" describes. With me it burns too rapidly, making the smoker and smoke unbearably hot, whilst giving off, if I remember rightly, a fair share of creosotish oil. Something, no doubt, depends upon the form of smoker, and perhaps a reduced draft is desirable. I use decayed wood, "touchwood" as it is called, and find it capital stuff if thoroughly decayed, and not *too* dry.

Gorse as a Honey Plant (p. 494).—Even though it yield no honey, it makes up its sweetness in other ways, by sanction of an old established custom. The old saw, which "D. M. M." quotes with evident approval be it noted, used to run in my young days:

"When the gorse is out of bloom
Kissing's out of fashion,"

though why fashion should poke its nose in is not so clear. The explanation of the apparently continuous blooming of the furze is probably that there is more than one species, flowering at different times. Even so it is a persistent bloomer, and any little interregnum about Christmastide is more than filled by the advent of the mistletoe, when one expects to whin the coveted favour as a matter of gorse.

The Compound Eye (p. 494).—At first sight, there does not seem to be much to support Mr. Hampton's theory of brain photographs, governed by their respective facets. If true, one would expect to find the facets arranged in such a way that they would be of most use for the purpose, that is to say, parallel rather than radiant, seeing that the earth photographs would be mostly in one relative direction. Or we might expect to find the bee with a longer neck and capable of looking over its shoulder. The upper part of the eye would hardly need the same development in that bees do not, so far as we know, leave the hive at night to guide their



EFFECTS OF WAX-MOTH IN A NEGLECTED HIVE.

flight by the stars. Of course, bees fly under bushes and trees, but if pictures of these be taken at will it is to be hoped that they are very comprehensive, or what becomes of the bee when all its negatives are used up? Are those lost bees which we occasionally find far from home foolish virgins who have used too recklessly their head lamps?

To Fix Handles (p. 504).—The best method I know of for handles which are merely easy, and not rattling loose, is to fix them with resin. Dust a little powdered resin into the hole and then thoroughly warm the "tang" until it will melt resin easily. Rub the hot "tang" upon a lump of resin, and drive home whilst still hot, when there should be no more trouble with that handle.

The Life of a Worker (p. 506).—Last spring I had a queenless colony, which so far as I could judge from an early examination, had been queenless during the winter. I did not requeen, and there was quite a lot of bees still alive in June, when I needed the hive too much to continue the investigation.

1913.—A Happy New Year to all brother (and sister) bee-keepers, and readers of the BRITISH BEE JOURNAL in particular.

BURIAL IN A BEE-GARDEN.

A correspondent sends us the following extract regarding an interesting incident in the "good old times," when Quakers were deemed outlaws by the Church:—

"The East Anglian" or Notes and Queries on subjects connected with the counties of Suffolk, Cambridge, Essex, and Norfolk. Edited by C. H. Evelyn White, F.S.A., Rector of Rampton, Cambridge. New Series. Vol. viii., page 326. 1899-1900.

In the early parish register of Shudy Camps, Cambs., which we recently examined, is the following singular entry:—"1669. Ferdinando Salmon, a person not excommunicate, was buried in the Bee-garden of George Bayly, his tenant, upon the 9 of November, by Joan Salmon his wife, and Robert Salmon and John Salmon his sonnes, Quakers."

PRESS CUTTINGS.

WHAT BEES SEE.

The final sitting of the International Congress of Entomology, held at Oxford in August, was remarkable for a paper on "How does the insect see the world?" read by Dr. Seitz, of Darmstadt. The expert believes that insects see colours very much as human beings see them. He cited an experiment made in Algeria, where butterflies were attracted to paper models of their own species, but could not, even at short range, detect the deception. Again, Dr. Seitz observed red and blue flowers which grew side by side in a certain locality in Brazil. Although the blue flower was the flower of the plant off which the butterflies fed, they were attracted to the red blooms first. Bees, again, have been noticed visiting red flowers; after fertilisation, the flowers become blue, and no longer attract the insect. It is evident that insects see colour, though they may not always reflect very deeply upon it.—*Evening Standard.*

NEW ZEALAND HONEY FOR ENGLAND.

The production of honey in New Zealand, reports the United States Vice-Consul, General Henry D. Baker, has during the last several years been showing a rapid increase. So much interest is now being evinced in bee farming that it seems likely the industry will attain considerable proportions. There are approximately sixteen thousand keepers of bees scattered over New Zealand. The total exports of honey for the last two fiscal years were: 1909-10, 27,999lb.; 1910-11, 115,864lb. The United Kingdom is the chief export market for New Zealand honey, and the variety of honey reported as being suited to the English market is one of fine flavour, bright orange or yellow colour, and smooth consistency.—*The Standard.*

Notices to Correspondents.

BETA (Northants).—*Mouldy Pollen in Combs.*—Combs such as you send should be melted down, as waxmoth is attacking them. Moths do not usually harm strong stocks, but weakly ones are always liable to their depredations. Weak stocks in autumn should be united, as it is not probable they will survive the winter alone.

THE DEPOSIT SYSTEM.

Disputes sometimes arise between advertisers and readers with regard to transactions originating through our columns, we would like to point out that our *Deposit System* was instituted to protect buyers and sellers alike when dealing with strangers, and if readers do not take advantage of the security it affords, those who consider that they have grounds for complaint must not expect us to enter into correspondence on their behalf. Particulars of the *Deposit System* appear on page ii, and we trust that readers will use it, as we cannot guarantee the *bona fides* of every advertiser, though we do all we can to ensure that only reputable firms are allowed to use our columns.—EDS.

Editorial, Notices, &c.

THE WEATHER OF 1912.

There could hardly be a greater contrast than the weather of last year with that of 1911, which was remarkable for high temperatures, abundant sunshine, and little rain. While the summer of 1911 was the warmest since 1858, and on forty-two days in a period of ninety-two consecutive days a shade temperature of 80deg. was recorded, reaching 90deg. on ten days, last year high readings were scarce, only on three days was over 80deg. registered, the highest being 91.4deg. on July 12th. On May 11th it was 81.2deg., and on June 19th, 83.4deg. The next highest was 73.2deg., on August 4th.

The year 1911 was remarkable for the amount of sunshine, and in July we had 320 hours of it; on the other hand, the only month last year which approached it was April, with 218 hours sunshine. In this respect it beat all the summer months, the hours registered being the greatest number for June, with 172.5 and 112.1 for August. During the year there were 500 hours less sunshine than in 1911. The rainfall up to the end of November was 10 per cent. above the average, and 3in. was added during December. The winter was mild, the mean temperature for January being 40.2deg., or 1.7deg. below the average for the month. The succeeding six months had also a mean temperature above the average. In the first week of February the most severe frost of the winter occurred. On the 4th the temperature did not rise above 28.3deg., but a thaw set in on the 6th, and the temperature rose and remained comparatively high for the remainder of the month, and reached 58.5deg. on the 28th. March was mild and was remarkable for high night temperatures, and for the fact that there were no frosts. The quarter to March 31st was the wettest of the previous eighteen years. During the three months 14.62in. of rain fell as against 4.74 in the corresponding quarter of the previous year, and it was only on September 29th of that year that the 14.74in. of rainfall was reached.

There was a change in the weather in April, which was the driest in fifty-five years' record. There was only rain for 1.6 hours, the amount registered being only .04in., the average for the month being 1.7in. No rain fell from the 10th to 27th inclusive. The temperature remained high, the mean being 50.2deg., or 2.1deg. above the average. There were more hours of sunshine than in any other month (218.7), and on each of eight days the amount exceeded ten hours. May was less sunny, and the rainfall was only 1.08in., the average being 1.75in. for this month. The favourable weather broke up and June was a wet month, the total rainfall being 3.23in. On the 19th the shade temperature rose to 83.4deg. and during the month there were 172.5 hours of sunshine. The rainfall in July was below the average, and there were 134.7 hours of sunshine. On the 12th the highest shade temperature for the year, 91.4deg. was recorded. August was a wretched month for bee-keepers, and will long be remembered as the wettest since 1881; 4.89in. of rain were registered, the average for the month being 2.39in. Rain fell on twenty-eight out of thirty-one days. The month is memorable for the deluge on the 26th in the Eastern Counties, when 6in. of rain fell at Norwich between 4 a.m. and 3.15 p.m., or more than double the average for the month. The temperature was persistently low and 70deg. was only once reached during the month, a great contrast to the previous year when the shade temperature only once fell below 70deg. There was also a great contrast in the number of hours sunshine, there being only 91.3 as against 259.9 hours in 1911. September was a slight improvement on August, there being sixteen days' drought, from 12th to 27th. September 11th was the coldest experienced in England of that day, and the temperature was no higher than 50deg., being about 20deg. below the normal. October was also a cold month, the highest shade temperature reached being 64deg. November had 88.5 hours of sunshine with a mean temperature above the average, and December was wonderfully mild, spring flowers, such as crocuses, snowdrops, aconites, and primroses being in bloom, and on the 22nd we saw bees carrying pollen into their hives. Wretchedly wet weather at Christmas was followed by fine braeing weather on the last days of the year.

On the whole, the year has been an unfavourable one for bee-keepers. The fine weather in April made a good beginning, bees were rapidly filling supers by the beginning of May, and it was thought that we were going to have a repetition of the experiences of the year before, but the remainder of the summer was in every way unfavourable and feeding on a large scale had to be resorted to, as bees were unable to store sufficient honey for their needs.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By George Hayes, Beeston, Notts.

(Continued from page 504, Vol. 40.)

In my first article under this heading I promised to give, at the conclusion, particulars of the way to study and deal with pollen-grains, but as several have desired

me to give these earlier I have thought it well to do so now, so that those who wish to follow the instructions may be ready to make a start in the coming spring.

In this, as in all other matters, if we are to be successful we must set about it in a systematic way, for by doing so it will often save a lot of worry, as well as time in retracing our steps, and if the few brief hints I give prove of service—as I hope they may do—I shall be content. As the subject has been so little dealt with, it is difficult for a beginner to find anyone, or even a book, that would help him to go deeply into the subject. I found it so, but having traversed the road it is possible that I may be able to guide others, at any rate to the point which I have reached.

It will be better to first enumerate the appliances, &c., necessary for this sort of work, together with a description of the use of each, and to mention the approximate cost. The necessaries are:—1, A microscope; 2, glass slips; 3, rings; 4, cover glasses; 5, bristles; 6, pipettes; 7, conical glasses; 8, gum dammar; 9, Canada balsam; 10, olive oil; 11, formalin; 12, honey without pollen grains; 13, small tubes and corks; 14, labels; 15, trays; 16, tweezers; 17, benzine or xylol.

The Microscope. This is the most essential and the most costly article in the outfit. To some of my readers it may seem a formidable barrier to the commencement of the pursuit, but I am quite sure that if they are able to purchase one they will not regret it—unless it is a regret that they had not purchased a better instrument—because of the pleasure and knowledge it will bring to them in ways other than the study of pollen grains. Microscopes may sometimes be purchased very cheaply second-hand, but these often work badly, and prove unsatisfactory. For this reason I would strongly recommend the purchase of a new instrument. Microscopes vary in price from £5 to £50, according to the way they are provided with accessories, and, of course, workmanship has to be taken into consideration. For our purpose a microscope at the lower price would suffice. It should have $\frac{1}{4}$in. and a $\frac{1}{2}$in. or $\frac{2}{3}$in. objectives. I should recommend the intending purchaser to procure a catalogue and study it before investing, and Mr. C. Baker, 244, High Holborn, Messrs. Watson and Sons, 313, High Holborn, or any of the dealers, will send one on application—a better choice could then be made. For instruction how it should be used I can recommend a handbook entitled "A Popular Handbook to the Microscope," by Lewis Wright, price 2s. 6d., or it might possibly be borrowed from the lending library.

Slips. These are slips of glass three inches long and one inch wide, upon which the object is placed or fixed for examination under the microscope. They may be obtained from fourpence a dozen or three shillings and sixpence a gross, in either thick or thin glass. I prefer the thin, as they are lighter and better for storing. There are also some thick glasses with excavated cells, one or two of which are often useful.

Rings. These are for forming cells on a plain slip, and are made from pure tin, cardboard or ebonite. I prefer the latter for mounting pollen grains, either dry, or in a medium. Many objects are mounted without cells, but for pollen grains and other delicate tissues I find a cell is necessary to prevent them from being crushed and distorted. These rings may be obtained in boxes of 100, assorted sizes and varying thicknesses, but those most suitable for this work are $\frac{5}{8}$in. diameter and 1-50in. thick. They will have to be ordered specially, and will cost about 2s. per 100.

Cover Glasses. These are used for temporarily covering any moist object on the slide to prevent evaporation and to keep the objective dry, and also for sealing down any object intended to be kept permanently. They are made in three thicknesses, both round and square, $\frac{5}{8}$in., $\frac{3}{4}$in., $\frac{7}{8}$in., and 1in. No. 1 are extra thin, being made for use with high-power objectives where the working distance is small. No. 2 are slightly thicker, whilst No. 3 are fairly strong, and do for ordinary work. To a beginner I would recommend the latter, as they are not too thick for objectives even up to $\frac{1}{8}$in. They should be of the round pattern to work with the rings previously described. These No. 3 circles are 3s. 6d. per ounce, and $\frac{1}{2}$oz. contains a large number. The $\frac{5}{8}$th size will be needed for the rings recommended.

Bristles. These are home-made—two of them being required, that is, one for each hand, and they are used for turning the pollen grains about during examination. Cut two fine stiff, straight bristles from an ordinary sweeping brush and mount each in a short handle about 3in. long and $\frac{1}{4}$in. diameter—a pen-holder cut in two will make both. The bristle should project about 2in.

Pipette. An ordinary straight fountain pen filler answers admirably at a cost of one penny.

Conical Glasses. Two ordinary conical graduated measures, such as are used in photography, are required, one to hold 1oz., costing 3d., and the other holding 3oz., and costing 5d.

Gum Dammar. Threepence per ounce. This is put in benzine, and when dissolved should be thin enough to be strained through old calico or filter paper; it should

then be allowed to evaporate until of the proper consistency for use. It should be kept in a balsam bottle, that is, one with a glass cap, or what is better still, put it up in a leadfoil tube, and use it from this.

Canada Balsam. Threepence per ounce. Treat as above. This will be found useful for some objects where gum dammar is not so suitable. The advantage of the latter over balsam and other cements is that anything wet can be sealed effectually with it.

(*To be continued.*)

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

THE CARE OF APPLIANCES.

(*Continued from page* 505, *Vol.* 40.)

The Smoker.—Probably one of the most neglected of appliances; when in use in the summer-time it is often cast on to the ground, or left on the top of one of the hives till required again. Rain and sun carry out their work of destruction by rusting the sprigs which fasten the bellows as well as the actual tin parts of the smoker. Many times I have seen them left out all the winter instead of being cared for in a proper manner. Smokers should never be allowed to get wet, for the leather of the bellows is made air-tight by being glued to the woodwork at the time of tacking it on; dampness releases the glue and causes the smoker to be inefficient in its work. When a new one is bought it is advisable to remove the metal tacks and secure the leather with copper tacks, which will not rust. The grid at the bottom of the furnace should be taken out and thrown away; it is only a nuisance, for in a very short time the holes get blocked, preventing the air from the bellows passing through freely. It will be found that the creosote from the material burned forms a thick crust inside the furnace, and more especially inside the movable nozzle. This should be scraped out from time to time in the summer, or it will rust the smoker, and at the end of the season it should be removed by means of hot soda and water, the parts afterwards being coated with vaseline. The leather of the bellows should also receive attention to keep it soft and pliable and retain its nature. Neatsfoot or sweet oil is the best for this purpose; linseed oil will cause it to crack.

Wax Extractors.—Those extractors for use with steam will probably be in use during the winter months, and therefore require attention before being put away in the early spring. The straining portion should be cleansed by boiling or soaking in turpentine; the latter is rather an expensive operation, but is the quickest and best.

Solar wax extractors should not be left out of doors throughout the winter. Before storing away, clean the tinwork inside thoroughly and coat the parts with vaseline. The woodwork inside should be thoroughly cleansed from any honey and wax spilt during rendering operations in the summer. When the extractor is double-boarded with felt between, as is the case with "The Weston," it is advisable to have the inner wood fastened with brass screws, so that it can be removed to allow the felt to be taken out and dried, otherwise, in washing, the water leaks through and causes it to rot. The outside of woodwork should receive two coats of black paint; this colour attracts the heat and facilitates the work of extraction. If the paint is put on now it will have several months to harden, so that when put out in the sun it will not blister; remember that to avoid this the wood must be thoroughly dry before the paint is put on.

Small Tools.—Scrapers cleaned, disinfected, vaselined; spur embedders scalded and cleaned; pliers cleaned and vaselined; wax-smelter emptied of both water and wax, dried, and put away to prevent rust. It is much better to have a brass or copper one, but if care is exercised by not letting water stand in it for any length of time, a tin one will last many years; neglected, it is only a case of months. Reels of wire should be carefully wrapped in grease-paper and stored away in a dry place; a few spots of rust will ruin the whole reel, for wherever this occurs the wire will break when an attempt is made to stretch it. See to any repairs necessary to the syringe used for bringing down swarms, loose parts should be brazed and new leather, &c., fitted to the plunger.

(*To be continued.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE SPIRACLES OF THE HONEY-BEE.

HOW MANY OF THEM ARE THERE?

[8633] The quiet season of the bee-keepers' year brings leisure, some of which may be pleasantly passed by those who are so fortunate as to possess a dissecting microscope, in making themselves practically acquainted with the anatomy of the honey-bee. As a point for enquiry and one which does not necessitate high-

powered lenses, a 1in. objective being amply sufficient, I would recommend the spiracles.

The reason for my choice of study is that there seems to be some doubt existing as to the number and position of these organs in drone and worker. We are told in our text-books, *e.g.*, Cowan's *The Honey Bee*, 2nd edition, pp. 51, 52, and Cheshire's *Bees and Bee-Keeping*, vol. I., p. 36, that in drone, queen, and worker, there are two pairs in the thorax, and that the pairs of abdominal spiracles number in the case of queen and worker, five, and of drone, six.

In May, 1910, there was published at Washington *The Anatomy of the Honey-Bee*, written by Mr. Snodgrass, at that time on the staff of the U.S. Bureau of Entomology. This interesting work, illustrated by excellent original drawings, was favourably reviewed in "B.B.J.," September 29th of that year. A copy has been recently presented to the B.B.K.A. library, and a previous perusal of it will facilitate the investigations now proposed.

An elementary acquaintance with insect life tells us that the body of the larva is composed of a series of segments, and that at the outset no differentiation of these into head, thoracic, or abdominal divisions is noticeable. In the course of progress towards the perfect insect most of the segments become specialised. Some entirely disappear; some become rudimentary; the greater part of them form a strong external framework; and a few are turned inwards to form strengthening stays to it. It is in this way that the thorax and abdomen receive a development suitable to the needs of the various families and varieties of insect life. In the honey-bee the chitinous segments that form the thorax are to a considerable extent welded together for strengthening purposes, while in the abdomen they are connected together by a flexible inter-segmental membrane allowing easy telescopic motion. For the most part the abdominal segments are each of them divided into a dorsal and a ventral portion, known respectively as the Tergum and the Sternum.

The text-books with which British bee-keepers are chiefly familiar regard the abdomen of the honey-bee as commencing immediately posterior to the petiole or waist of the insect, and the petiole as a segment of the thorax. The school of entomologists to which Mr. Snodgrass belongs, believes that the true anterior segment of the abdomen bears the petiole and has become fused to the thorax. "The posterior part of the thoracic mass," writes Mr. Snodgrass, p. 58, "consists of the first abdominal tergum, which fits into the deeply concave posterior edges of the metathorax and forms the peduncle that carries the abdomen. It consists of a single large, strongly convex sclerite (plate) bearing the first abdominal spiracles laterally, and having its surface divided into several areas by incomplete sutures.

"Many entomologists find it difficult to believe that this plate, which so apparently belongs to the thorax, is really derived from the abdomen. But the proof is forthcoming from a number of sources. In the first place, the thorax is complete without it, and the abdomen incomplete without it, the latter having otherwise only nine segments. Again, if the plate is reckoned as a part of the thorax we should have the anomaly of a thorax with three pairs of spiracles—these being the normal two on each side situated, as they always are, between the true thoracic segments."

I omit the remainder of this interesting argument as being foreign to our subject. We have now reached the special point of investigation that I desire to recommend. Are there two pairs of spiracles in the apparent thorax of the honey-bee, as laid down in our text-books, or three as stated by Mr. Snodgrass?

Let us first briefly consider the abdominal spiracles posterior to the petiole. They can be easily made out by dissection. According to Mr. Snodgrass, and this will be found correct, there are of these, six pairs exposed and one pair concealed in the queen and worker, and seven pairs externally visible in the drone. Each of the exposed sections consists of a tergum and a sternum, the former reaching far down on the side of the segment, where it carries a spiracle and overlaps the edge of the tergum, the two being joined together by a flexible membrane. Yet another spiracle (the one concealed) can be found by opening the tip of the abdomen of queen or worker. "Within the dorsal part of the sting-chamber is a slight suggestion of the eighth [from the text-book point of view the seventh] tergum, which, laterally, is chitinised as a conspicuous plate bearing the last abdominal spiracle," p. 77.

In the drone the last normal segment, *i.e.*, the last one having a complete tergum and sternum resembling those of the anterior part of the abdomen, is the sixth (text-book reckoning). Behind the sixth tergum, and partly concealed within it, is the seventh tergum, carrying the last abdominal spiracles.

The posterior thoracic, or, according to Mr. Snodgrass, the first pair of abdominal spiracles, are easy to find, because, like those in the after portion of the abdomen, they are situated in strong chitinous plates. These "sclerites" are not much encumbered by hairs, and a good view can be obtained from within by transmitted light. The part containing a spiracle

can be conveniently cut out with scalpel or scissors for closer examination.

The remaining two pairs of spiracles, if two pairs there be, present more difficulty. Owing to the strong and very convex structure of the thorax it cannot be flattened out without injury to the comparatively flimsy folding membrane that connects the joints and contains the spiracles. It is necessary to view them externally, and a freshly killed bee should be partly imbedded in wax or otherwise fastened down to be examined under direct illumination, or a good strong natural light. The numerous hairs should be scraped off with a small dissecting knife. The joints of the part of the thorax concerned should be opened by gentle pressure sufficiently to spread out the membrane connecting them.

The pair of spiracles nearest to the head of the bee are concealed by a protecting chitinous flap, a "lateral lobe of the pronotum," projecting from the posterior edge of the prothorax towards the basal process of the front pair of wings. This flap must be lifted up or cut away in order to expose the spiracles.

The second pair are still harder to find. I have hitherto failed to find them. A study of Fig. 21 in *The Anatomy of the Honey-Bee* should be of assistance. The exact position is not shown, but I learn from Mr. Snodgrass that the spiracle "is folded into the groove between the upper ends of the plates Epm_2 and Pl_3." The position may be specified as being in the not over well defined joint between mesothorax and metathorax, close underneath and slightly anterior to the process of the hind pair of wings.

I have great hopes that what I have written may induce some of our bee-keepers to verify Mr. Snodgrass' statement as to the existence of this second pair of spiracles. I imagine that those generally noticed in the apparent thorax of the honey-bee are the anterior pair of all, and the most easily found pair that are in reality abdominal. Generally speaking, throughout the hymenoptera the first abdominal (and spiracle bearing) tergum is more or less intimately fused into the thorax; less, for instance, in the true sawflies than in the honey-bee. It seems, therefore, natural to expect to find three pairs of spiracles in the apparent thorax of the honey-bee, and if there is any doubt existing the sooner it is dispelled the better. That we should not take things for granted when we can see into them ourselves is a good maxim for bee-keepers, and refers equally to Mr. Snodgrass' treatise and to our own much-prized text-books.

For the benefit of any bee-keepers who may wish to work on drones, I may add that I have had a supply of them soaking for some weeks in a solution of caustic potash, so that the chitine is sufficiently soft to facilitate examination of the abdominal spiracles. I will not answer for the thoracic. I shall be pleased to send a few on application as long as I have them to spare. If no reply is received the applicant must gather that the supply is exhausted.—H. J. O. Walker, Lieut.-Col., Leeford, Budleigh Salterton.

KILL OR CURE.

[8634] Mr. Macdonald (page 3) seems to have fallen into a positive slough of despond and, apparently, he thinks the only way out lies in the direction of the City of Destruction. Such a retracing of steps cannot surely make for progress, for think what the logical outcome of it is bound to be. At what stage Mr. Macdonald thinks we should give up trying to cure and definitely make up our minds to kill, it is difficult to gather, but, in any case, assuming that his object is to prevent the spread of infection, it is obvious that it must be at a very early stage, for everything goes to show that long before colonies reach the point when they can be assuredly regarded by the non-protozoological bee-keeper to be suffering from the "crawling sickness," they have commenced to infect the surrounding colonies. That being so, it seems to me that if no cures are available, the only sound course to pursue would be to destroy every colony within range directly any one colony showed unmistakable signs of the disease. For, mark you, Mr. Macdonald does not believe in immune bees, and if any odd one or two of the hundred colonies in the apiary should be apparently immune, they are not really so, but are only "disease carriers." I do not think the authors of the "Report," with which Mr. Macdonald fortifies all his arguments, ever intended to regard immune colonies as a serious danger. *See section x., paragraph 7, page 128, of Report quoted below. They certainly include them as a serious factor in the spread of the disease, but, nevertheless, unless we can find a sound method of getting rid of the parasite, our only hope must surely lie in perpetuating a race of bees on which it has no effect.

If Mr. Macdonald's idea is carried out logically, it is only a matter of time before bees cease to exist altogether, for, as no reasonable being will destroy stocks until he is certain they are affected, and since it is a thousand to one that by the

*"We think that good results might be obtained if attempts were made to build up apiaries from stocks which show well marked resistance to the disease in infected apiaries, or from stocks known to be partially immune."—*Vide Board of Agriculture Report.*

time one stock has reached that stage, the others have already become affected, the disease will be kept constantly alive until only those bees which are immune are left. And if, as Mr. Macdonald argues, there are no immune bees, that will be none at all.

As nomenclature is in the air, perhaps it may be pertinent to ascertain what is meant by a "cure." Apparently Mr. Macdonald will not be satisfied that there is a cure until it is possible to say that the disease will not break out again. But is that the generally accepted view of cures? If so then we have found a cure for nothing under the sun. If a zymotic disease breaks out in a town in March, rages during April and May, and disappears during June, July, and August, do we say, when it breaks out again in September that it was not cured in June? Similarly, I think, if a remedy applied to a stock in the spring—a stock suffering very badly, mind you—so far pulls it round that it stores a hundredweight of honey, I think that cure is good enough to go on with, even if the disease breaks out again in September. And I know, not one nor two cases, where that is precisely what happened only this year. If Mr. Macdonald is satisfied that the advertised cures are germicides and have a beneficial effect, he and everyone else is surely justified in using them. If they do prove beneficial, it can only be a matter of thoroughness and persistency to enable them to act as complete cures, even taking Mr. Macdonald's standard of a cure as the ideal to be reached.

My view is that we gain little or nothing by destruction. All we succeed in doing is to protract the painful period, for, if there is no cure, we can only wait until all bees which are not immune are wiped out. We can, in fact, only leave the fight to be fought between *Apis* and *Nosema*, until one or other is exterminated.

That is not the way in which mankind has fought diseases up till now, and I do not think we are going to begin in the twentieth century. We have got to find a cure, we *will* find a cure, and I hail with joy the utterances of every man who claims to have done so, and wish him unmeasured success.

With cordial good wishes to all brother bee-keepers for success during 1913.—HERBERT MACE.

MAKING THE BEST OF MODERATE STOCKS DURING SHORT HONEY-FLOW.

[8635] It is so easily done. Say you have two hives standing together at the heather. In one of them the bees are not up in the super; in the other they are only working in the middle sections. You take the weaker stock right away and soon the hive left at the old stand is booming, and the super packed tight full of bees.

You are now as sure of getting surplus as any bee-keeper on the moors, and you may go and sell the honey for a good price. Don't attempt this concentration when the weather is dull or cold, and no bees flying (if you do you may have some awful slaughter), but do it when the bees are strong on the wing, and you will see the flyers join forces harmoniously, humming loudly; and fanning at night in serried ranks.

Everything in the hive which has been moved away is very quiet; no outcoming and no ingoing. In a few days, the young bees will take up the "field" work, but the heather harvest, which would have been stored in the brood combs for winter food, will be stored by this manipulation in the super of the other hive. You get this honey; it is "surplus," and the price to you is prompt and liberal sugar feeding and plenty of warm packing.

This plan is wide in its application. It can be carried out before sending the hives to the moors, and it also works well for the clover harvest. Swarms can be doubled or boomed in the same way.

I have successfully experimented on these lines during the past five years, with moderate colonies. It occurs to me that it would pay even better to run all hives in pairs, and concentrate strong as well as moderate stocks, especially for the heather harvest, sending half of the hives to the moors, and keeping the other half at home, thus saving cost of cartage and standage, and getting much more of the heather harvest stored in the sections.—J. N. KIDD, Stocksfield-on-Tyne.

DELUSIONS ABOUT BEES.

[8636] I met Mr. D. M. Macdonald, of Banff, for the first time, at Inverness, on the 21st of December last, and we agreed very well indeed. We did not quarrel even once about the age of bees or any other question. Perhaps this was because he had not yet got his copy of the "B.B.J." for December 19th, but I do not believe that was the reason. I have noticed with keen satisfaction that all the bee-keepers whom I have met, or with whom I have corresponded, have been very nice people. How is it, sirs? Is it that only the best people think of keeping bees, or do the bees exercise such a humanising influence that even the churl becomes a gentleman?

Santa Claus, in the guise of Mr. Brodie (of Messrs. Steele and Brodie) has been thoughtful enough to send me Root's A B C as a Christmas present, and I have

taken the opportunity of consulting this leading authority on two of the points raised in my last communication. I find that there is evidence from America which goes far to show that both Mr. Macdonald and I may be right as to the age of a worker bee. "The average life during the summer-time is not over three months, and perhaps during the height of the clover-bloom, not over six or eight weeks." And this is very interesting: "The bees will live considerably longer if no brood is reared, as has been several times demonstrated in the case of strong queenless colonies." The Lurebost stock, which survived well over three months, had never reared any brood.

Mr. Reid, of Balloan, one of the most scientific of the Northern bee-keepers, thinks I should write a more extended account of the queen I saw being mated. Unfortunately, I was unable to give much attention to the phenomenon because I was in the centre of a class of boys and girls—nearly all schools in Scotland have mixed classes. It was one of the boys who pointed out the queen and drone attached to each other on the porch of one of the hives, and I had to dismiss the subject in a sentence of explanation. But it was enough to make me doubt Maeterlinck. Root has no hesitation in stating that queen-mating takes place not very high up from the ground, and he quotes the testimony of several eye-witnesses who have seen the meeting not very far from the hives. The late E. L. Pratt (Swarthmore) reported that when the mating took place the queen and drone "were flying not six inches from the ground, and were not over eight feet from the fertilising-box," which the queen afterwards entered. The drone does sometimes die instantaneously, as described by Maeterlinck, but one observer records that the drone lived three minutes after the queen had wrenched herself free.

These facts may have an important bearing on the practical work of the queen-breeder who is anxious to keep a pure stock. Hitherto it has been held to be essential that the apiary must be at least four miles distant from other hives if the mating is to be with selected drones. Mr. J. L. Byer, of Ontario, writing in the *American Bee Journal* of October last, states that for six or seven years one of his apiaries, containing mostly Carniolans, has been situated about six rods from an apiary containing blacks of a nervous and cross disposition. "After these years of close neighbouring, my yard is still largely Carniolan, while the other bees are as black and as nervous as ever."

It is almost universally believed, probably on the authority of Huber, that almost the first act of a new-hatched virgin is to search for and destroy any other queen-cells. We have generally three or four Nicolson observatories in use every summer, and thus we have unusual opportunities of watching the behaviour of virgins. We have never observed one display the slightest desire to attack the other cells. For some hours after hatching the virgin never goes far from her cell. She does not venture to the other side of the frame for a day or more, and when light is let into the hive she flies back to her own cell. So constant is this behaviour that when I want to show a young virgin I open the shutter on the side on which she was born, and wait till I see her crawling over the empty cell.

The bees frequently tear down one or more of the cells before any of the queens have hatched. On June 27th last year I found two pupal queens thrown out in front of a nucleus which had several queen-cells. I concluded that the first hatched virgin had begun the work of destruction. An examination, however, showed no virgin loose in the hive, but all the cells except one had been torn down. This one hatched in due course.

Monday, September 9th, 1912, was a very cold day, and I found in the morning that some of the bees in one of my observatories had fallen benumbed on the floor. The other bees were clustered thickly over some queen-cells that they were cherishing. Later in the day I observed first one and then another queen thrown on the floor, apparently lifeless. Careful search in the tunnel revealed other two virgins. I carried them into the house with a view to preserving them for anatomical purposes. In the warmth, all began to move, and two recovered completely, so that they were caged with some bees. I do not think they had been chilled in the cells. Rather, they had been deliberately exposed, like the less perfect children of the Vikings. On Tuesday we found a virgin loose in this hive, and there were still one or two cells to hatch. Wednesday showed a second virgin loose on the other side of the comb about nine in the morning. At one o'clock I showed the two virgins—both quite lively and easily distinguishable by their colour—to two visitors. When I returned in exactly half-an-hour, both had completely disappeared!

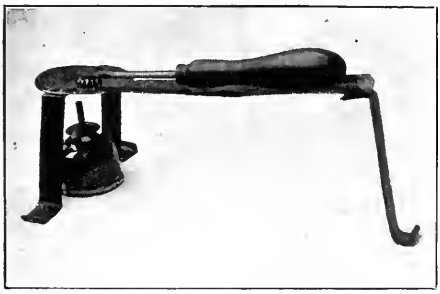
The conclusion we have come to is that in some cases at least the destruction of queen-cells is due to the bees and not to the animosity of the first-hatched virgin against her younger sisters. In one case we noted that it was the oldest cell that the bees tore open, and possibly this is usual. The first queens were made in a hurry, probably from larvæ that were rather old. When the bees felt sure of getting queens that had been fully tended from earliest grub-hood, they preferred to sacrifice cells likely to produce less perfect

virgins. A practical conclusion is that the bee-keeper is possibly wrong in preserving what he thinks the most promising queen-cell. He should leave the selection to the bees, who probably know quite well what they are about, and are not so foolish as to allow the (probably least satisfactory) virgin which happens to hatch first to destroy all the other cells.—J. Anderson, Stornoway.

HEATING "WIOBLET" SPUR EMBEDDER.

[8637] I have pleasure in sending for publication a photograph of a useful little appliance I have invented for heating the "Wioblet" spur embedder.

The stove is very cheaply put together, the legs being made of the steel binding used on packing cases, while the platform



consists of a piece of sheet iron worth about a penny or less. The lamp is one of those that can be bought at any chandler's shop for a penny, in which paraffin or methylated spirit can be burnt. I thought the idea might be useful to my fellow bee-keepers.—F. S. F. Jannings, Warmsworth Rectory.

EDUCATION IN CONNECTION WITH RURAL INDUSTRIES.

[8638] In my childhood days the subjects taught in Board Schools consisted of the three R's only, and the person who dared to suggest the slightest deviation from the regular curriculum which had been in force for a number of years, would have been considered insane. The child therefore had to wait until it left school before it had the opportunity of acquiring a knowledge of those subjects which would enable it to earn a livelihood, or add considerably to the sum obtained by regular employment in any particular branch of rural industry.

The exigencies of modern conditions, which compel us to make money from every available source, has revolutionised education in our schools. Girls receive instruction in domestic economy, cooking, needlework, and even the nursing, feeding, and attention to babies, forms a part of their education every day. Boys are taught to observe the wonders of Nature, how to care for their gardens, poultry, rabbits, and other live creatures; carpentering, fruit-growing, and gardening. In connection with the latter, bee-keeping occupies a prominent position.

It is good for the country that this is done, and there is no doubt that such a common-sense innovation will be invaluable to the rising generation, enabling them to take advantage of the natural resources of our country, which have been sadly neglected. If we can create a love for Nature in the young, then it will be possible to retain them on the land instead of their crowding into the towns and cities, which is far too prevalent at the present time.

The teaching of bee-keeping in schools has grown gradually for the past fifteen years, and is not a recent innovation, as some writers would have us believe. The credit of being the first County Council to take up this work belongs to Wiltshire, and to-day she holds the foremost position in this respect. It is almost a *sine quâ non*, that to obtain a post as schoolmaster in Wilts, a thorough knowledge of gardening, poultry, and bees is necessary. A limited number of the masters are allowed to spend several weeks in the summer on the farm of Mr. A. D. Allen, the Council's instructor in poultry and bee-keeping, for the purpose of gaining a practical knowledge of both these subjects.

Bedfordshire also does this kind of work very thoroughly; for the past fifteen years the Junior Editor of the "B.B.J." has taught bee-keeping to the scholars in the schools, also each year a schoolmasters' course extending over several weeks in the summer, has been held at the Council's farm at Ridgmont, bee-keeping (by the same teacher) forming no inconsiderable part of the curriculum.

In the majority of the schools in these two counties, bee-keeping is taught by the masters as one of the regular subjects; "The British Bee-keepers' Guide Book" and the "Dissectible Model of the Queen-Bee," being the text-books used. The good work done in the past is now bearing fruit both at home and in the colonies. Many of the pupils have obtained the certificates of the B.B.K.A.

Other counties which now include this subject are Kent, Yorks., Lancs., Herts., and Staffs.

Credit is due to a large number of masters who have taken up the work in their own schools on their own initiative. Mr. Anderson, in the Island of Stornaway, teaches bee-keeping, and interesting illustrations and descriptions of his work appeared in the *Record* of 1911, pages 119,

120, and 121. Also on page 187 in the same year an account appears of a bee-keeping company, formed by the children in one of the schools in the West Riding of Yorkshire, which paid a dividend of 5d. on 6d. shares. At both St. Mary Cray, in Kent, and Hounslow, in Middlesex, there are bee-keepers' companies formed by the schoolmasters; while at Bisley Mr. G. Steventon is doing invaluable work in a large school for boys, and so one could go on *ad infinitum*, showing how schoolmasters are helping forward the craft amongst the rising generation.

Not only schoolmasters but laymen do much in this way, and I know of several who devote a great deal of their spare-time to taking classes of boys for lessons in bee-keeping. I mention two cases only. Mr. Brierley, of Worcester, who teaches boys on Saturday afternoons in his apiary, and Mr. G. J. Flashman, of Barnet, who cycles many miles to take classes of boys in bee-keeping. Both these gentlemen do not receive the slightest recompense for their labour, but do it for the good of the pupils and the craft.

In other countries, bee-keeping is taught in the schools: in France, Germany, and even in far away Tunis the work is done very thoroughly. The *American Bee Journal* has a number of very interesting illustrations of the school work in Tunis, which show how admirably both the scientific and practical instruction is carried out.

Therefore, those of us who are nearing the last milestone may rest content that when it is passed there will be left amongst the younger fraternity those capable of carrying on our beloved occupation in a creditable manner.—THE DRONE.

HOMES OF THE HONEY BEE.

APIARIES OF OUR READERS.

Mr. C. Smith sends us a picture of his cottage apiary for publication among the "Homes of the Honey," paying us the compliment of saying that as a reader of the "B.B.J." he always finds it very instructive and interesting. He modestly refrains from making us envious by dilating on his success as a bee-keeper,

MR. CHAS. SMITH'S APIARY, WATTISFIELD, DISS.

but mentions having taken 150lbs. from one hive. Not bad for a beginner. Referring to the bees, he says:—

"I have kept bees for the past four years, and find bee-keeping very profitable and interesting. The year 1911 was my best, so far, and I took 150lbs. of extracted honey from one hive. I may say that most of the hives in the photograph are home-made, made in spare time in winter evenings. I am not a joiner or carpenter by trade, my work being at the "Potteries."

TIT'S NESTING-PLACE IN A BEE-HIVE.

A correspondent sends the following note:—

"The tits are often capricious—perhaps more so than other birds—in their choice of a breeding place, but a nest which I had under observation last year indicates quite extraordinary audacity on the part of a pair of coal tits. The nest was built inside a hive of bees housed on bar frames—one of a group of eight, and the weakest, so the owner told me, of the lot. Access had been gained through the ventilating hole in the rear of the movable lid of the hive. Lifting the lid, the covering which confined the bees to their combs was found to be littered with moss and soft grasses, and towards the front of the hive, farthest away from the light, a cosy nest of wool was sunk. On my first inspection the nest contained seven eggs—white, faintly speckled with tiny spots of red at the thick end—but the next time I looked inside the hive a group of gaping youngsters greeted me. Replacing the lid, I sought cover behind some fruit bushes, and soon one of the old birds appeared, and after perching in a row of pea sticks a few yards distant from the hives, flew into the hole—which half-a-crown exactly covers—without alighting on the roof of the hive, a process repeated every time during my visits. While the tits, with wriggling caterpillars in their beaks, were thus going and coming at the rear of the hive, in front the bees, which have shown no resentment towards their uninvited guests and winter enemies, were, in the hours of sunshine, dropping on the landing board laden with nectar and pollen from the blossoming trees."—*Yorkshire Weekly Post.*

WEATHER REPORT FOR THE YEAR 1912.

WESTBOURNE, SUSSEX.

Rainfall, 38·72 in.
Above average 8·93 in.
Heaviest fall, 1·43 on Sept. 29th.
Rain fell on 200 days (above average 24)
Sunshine, 1524·2 hrs.
Below average, 300·9 hours.
Brightest day, June 22nd, 13·6hrs.
Sunless days, 80 (above average 20)
Maximum temperature, 84 on July 15th and 16th.
Minimum temperature, 16 on Feb. 4th.
Minimum on grass, 14 on Feb. 3rd.
Frosty nights, 47 (below average 23).
Mean temperature, 49·1.
Above average, 0·7
Maximum barometer, 30·597 on Oct. 4th.
Minimum barometer, 28·868 on Mar. 18th.

L. B. Birkett.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

December, 1912.

Rainfall, 4·22 in.
Above average, 1·04in
Heaviest fall, ·70 on 25th.
Rain fell on 21 days.
Sunshine, 25·3 hrs.
Below aver., 29·5 hrs.
Brightest day, 2nd, 4·1
Sunless days, 17.
Maximum temperature, 54 on 27th and 28th.
Minimum temperature, 23 on 1st.
Minimum on grass, 17 on 1st.
Frosty nights, 6.
Mean maximum, 49·6.
Mean minimum, 39·4.
Mean temperature, 44·5.
Above average, 4·6.
Maximum barometer, 30·395 on 3rd.
Minimum barometer, 29·360 on 26th.

L. B. Birkett.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

L. W. J. DEUSS (Fort Johnston).—*Artificial Queen-rearing.*—There is no doubt you were too late. A queen evidently had emerged, and all the queen-cells, except the one you mention, had been torn down by the bees.

W. H. (Cookstown).—*Disinfecting Combs from Diseased Hive.*—On no account try to disinfect the combs. It is not safe to use them. Melt them down for wax, or—better still—burn them.

THE DEPOSIT SYSTEM.

Disputes sometimes arise between advertisers and readers with regard to transactions originating through our columns, we would like to point out that our *Deposit System* was instituted to protect buyers and sellers alike when dealing with strangers, and if readers do not take advantage of the security it affords, those who consider that they have grounds for complaint must not expect us to enter into correspondence on their behalf. Particulars of the *Deposit System* appear on page ii, and we trust that readers will use it, as we cannot guarantee the *bona fides* of every advertiser, though we do all we can to ensure that only reputable firms are allowed to use our columns.

Editorial, Notices, &c.

BEE-KEEPING IN ALGERIA.

Interesting particulars about bee-keeping in Algeria are given by Monsieur F. Lees in *l'Apiculteur*, which are illustrated with photographs of Arab apiaries and also those of European settlers. The writer recommends Algeria as an ideal colony for the bee-keeper. The climate is superb, flowers are plentiful, and bees can work nearly all the year. Moreover, the consumption of honey by the natives is enormous and good prices are obtained for what is produced in the colony, for, as a matter of fact, Algeria does not produce sufficient honey to supply her own demands. The climate, similar to that of California, is particularly well suited for bee culture. Along the sea coast the temperature in winter rarely goes down to freezing-point, and in summer it is from 77 to 95 degrees Fahr. All parts of Algeria are not equally good, and the professional bee-keeper selects for preference the plains and valleys near the coast in the vicinity of the culture of geraniums and oranges, woods of Eucalyptus and brushwood, where heath and rosemary are plentiful, and he naturally avoids the neighbourhood of vineyards and regions where cereals are cultivated, as these are useless.

M. Lees says the black bee of the country is the one usually cultivated, but it is bad-tempered although very prolific, much addicted to swarming, and uses an immense quantity of propolis. The natives are very fond of honey, use it in preference to sugar, and attribute to it valuable medicinal properties. This conviction is founded on certain passages in the Koran. As a result honey in Algeria realises a good price. This colony should be in reality exporting honey, but is obliged to import it as the demand far exceeds the production. The quantity imported is 459,700 kilos, of which 127,043 kilos are consumed in Algiers alone, the total value being 354,000 francs. There are 1,132 European and 24,693 native bee-keepers in Algeria, the Europeans owning 12,637 colonies, and the Arabs 206,617, the quantity of honey produced by the two classes being 59,112 kilos, and 748,742 kilos, and 6,282 and 103,731 kilos of wax. The average produce of a native hive is from two to five kilos, while Europeans obtain an average of 15 kilos.

Instruction in bee-keeping is given at the Colonial School of Agriculture by Professor Peytal, who also gives instruction at the Normal School, and encouragement is given by the Government for teaching bee-keeping in schools. M. Regnier is one of the largest bee-keepers in Algeria and owns 1,000 colonies, from which he derives a large income. There is a Bee-Keepers' Co-operative Society at Constantine, under the management of M. Feuillebois. It has forty-two members who contribute fifty francs each, this being sufficient for establishing two colonies. The last returns showed that 1,267 kilos of honey were produced and sold for 709 francs, which shows a very handsome interest on the money invested, far exceeding that obtainable in any other industry.

W. B. CARR MEMORIAL FUND.

	£	s.	d.
Amount already acknowledged	11	0	10
E. A. B. and K. J. B.	0	5	0
A. Raymond	0	1	0
H. Ingham	0	0	6
W. H. Hogley	0	0	6
"Two Hives"	0	0	2
	£11	8	0

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of December, 1912, was £1,063.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

AMONG THE BEES.

COLOUR OF POLLEN.

By D. M. Macdonald, Banff.

In closely studying bees carrying loads in their corbiculæ, one is struck with the ever varying shades. The almost infinite variety is quite attractive. Yellow predominates, but it varies all the way from a very light shade of straw-colour shading off to a creamy yellow; and from that many hues pass to what I may call a yellow-grey or yellow-brown; then, intermediately, we have a vivid orange almost red in shade. From the white clover and the heather we have a grey of different hues, and from some poppies it approaches an all but black colour. Dull brown of almost a funereal hue is fairly common, and as a contrast we find loads almost a pure white. Then occasionally we discover green-coloured pollen, and still rarer a dark or bright blue. It is a mistake to expect pollen to look like the flower it has been gathered from, because the flower and its "dust" are in general quite dissimilar in colour.

Again, and this is an important feature, pollen seen under different circumstances, or surroundings, may show not only various shades, but different colours. Thus, Lorage pollen, when freshly gathered, is

a very light bluish-grey, but under different circumstances it shows yellow! That of apple blossom, seen in the baskets of the bee, is one of the palest of green colours; but preserved for some time in the cells it darkens very much.

I am interested in this and would like to pursue the matter a little further. Take one of the most common sources: pollen from heather or one of the heaths, which at various times I have seen described as grey, light-grey, dark-grey, brownish-grey, slate-grey. On page 456, Vol. 38, Miss Annie Betts who has given much study to pollen, characterises the colour of a load of pollen from *Calluna vulgaris* as light-grey, and that from *Erica cinerea* as grey. On page 304, Vol. 39, so excellent an authority as Mr. George Hayes says: "The pollen from these three heathers is very similar, and for this reason we may treat them as one." Lest this description might be thought to relate principally to shape and general appearance, I further quote what he says as to colour: "The colour of the pollen by reflected light is *white*, but by transmitted light of a *golden yellow*. The reason of this is that the mother-cell is a white covering to the coloured (yellow) pollen grains beneath it. The after form, of course, is golden-yellow, both by reflected and transmitted light." Writing again of pollen from raspberry, we have the following: "The pollen, when taken from the anthers, is almost white, but when packed in the corbicula of the bee is a rather dirty looking white, and under the microscope it appears of a greenish-yellow hue." Here is the same pollen, showing, under different circumstances, three different hues, and to this I will add a fourth, for when packed in the cells I have seen it much darker than either of the three.

Delusions.—The foregoing, written some time ago, I think wipes off the slate one of the three "delusions" my compatriot, on pages 506-7 last volume, seeks to pin on me. (1) It is true I described pollen from the whin (contrasted with the "bright, vivid yellow" of the broom) as a "darker, dull yellow." That is how it strikes me still. The "bright, reddish orange" of my "genial chaffer" tells much the same tale. Let him, however, view pollen from whin under varied circumstances and surroundings, as explained above, and he will, with a wider horizon, discover it assumes more than one shade.

(2) Does the whin yield nectar? The subject was exhaustively discussed (Mr. Anderson may not be aware of this fact) in the earliest volumes of the "B.B.J." and again at a subsequent date. At that time I would have considered broom and whin useless so far as nectar was concerned, but on evidence I had to change my mind so that there is no delusion here. Bees coming direct from whin (or gorse) were sacrificed, and some nectar was found in their honey sacs.

(3) How long does a worker bee live? I know it may live eight months at least, but I know that in the busy season they drop off in four weeks from the time they begin foraging. If Mr. Anderson introduces a yellow strain, or marks his bees, he can prove these statements and convince himself that "authorities" prove their stated facts—and "Facts are chiels that winna ding, and downa be disputed."

The little story of the Lurebost swarm is no novel one. I recorded just such another some years ago in regard to a queenless Southern swarm of early June, with which I experimented until October. I suppress some facts I had intended to supply, because in the last JOURNAL my "chaffer," on wider knowledge, acknowledges he might have been a little hasty in his accusation of my being a deluded bee-keeper. Work, as I have before now asserted, kills bees off more than mere length of days or weeks. One bee puts more energy into its brief spell of existence than another, and so lives a briefer space of time. Bees of queenless swarms do not lead laborious days. They gather nectar, and to a certain extent build comb, but they have no brood nursing, no chyle-forming, and no excessive waste of tissue.

I never heard of any up-to-date bee-keeper who would assert that bees rigidly confine their visits to one species of flower when pollen gathering. In the main *they do*. Even the drawing of Mr. Sladen's corbicula, a rather fancy one perhaps, shows only an infinitesimal proportion of dissimilar pollen in the loaded basket. Mr. Anderson need not fear that I will take umbrage at any facts contradicting any statement of mine, and I don't feel "squashed" as our mutual friend feared. His sincere love of the bees and bee science would cover a multitude of sins, even if he had such—but I know of none!

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

INFECTIOUS PARALYSIS.

[8639] Mr. Chas. H. Heap, p. 458, November 14th issue of the BRITISH BEE JOURNAL, imagines I have set myself the impossible task of trying to persuade bee-

keepers that this disease is quite a simple matter.

I do not by any means expect to persuade the majority that it is a simple matter. I can only tell them that *it is so*, where rational methods or prevention and cure are adopted. But the great difficulty is that the majority will not carry out those simple and rational methods of recuperation which will surely and finally wear out this plague which has been allowed to destroy thousands of colonies needlessly.

Our helpless friends retain the same old queen in the hive they attempt to treat: they retain a variety of bees that will not throw off all trace of the disease; they are afraid of unusual ventilation; and, finally, they assert there is no permanent cure.

I am quite aware that a partial or temporary cure cannot be considered a permanent or final benefit; but my own references are made to reports of actual and permanent cures only, following upon my instructions; and I have no intention of referring to temporary improvements as definite and final cures.

If my critical friends cannot show or refer to any but temporary improvements, then certainly their knowledge is limited to the extent of such failures; and they have yet to discover what is meant by vital recuperative energy.

Mr. Heap himself says "how delightfully simple—and cheap" are the suggestions I offer. If in his own mind, in spite of his assertions to the contrary, he sees that my propositions are so simple, why in the world does he not follow them, so that he may come out on top, and, by his ultimate success, show other disbelievers how to eradicate this plague.

If my friend had an injured leg, and a surgeon told him it must be taken off, would he not gladly listen to another who assured him that the apparently useless member could be certainly cured; and if the latter did ultimately cure the once condemned limb, would he consider he had a new leg, or one that was restored to usefulness?

Thus, he says, if one can renovate a stock by giving it a young queen, in connection with other simple curative measures, it is the same thing as making an entirely new and independent stock.

But the stock, and I will say two to three further stocks, may be made up on the basis of the old colony, which, under the usual helpless conditions, would be left to die out, or be destroyed: a reckless waste of material.

How many of the unfortunate ones who have lost all their stocks would have been only too glad to check the malady, and finally cure it, had they realised in time the "delightfully simple—and cheap" combination I offer as a permanent cure.

I have already given many examples of permanent cures; I have shown the necessity of discarding bees that will not help themselves; I have insisted upon the folly of retaining the old queens in stocks once affected; I have advised the absolute necessity of allowing unusual ventilation; and every bee-owner who wills may ensure that vitality in his stock such as will overcome any disease as yet known in the apiary.

There is as much difference in the vitality of the workers of old and young queens, and between different races of of bees, as we may find among animals, man, trees, &c. Some will succumb, while others under the same conditions thrive and multiply.

I will refer now to fruit trees. I have on the same spot two varieties of apple trees. One kind may be simply ragged from the destructive action of caterpillars and other pests: while the other, close by, is unaffected, and continues full of dark, perfectly-shaped green leaves all the summer, without a wash of any kind or grease bands being applied.

Even when kept free from the caterpillars, the first-named tree develops slowly on a somewhat shallow soil; the other, in the same ground, makes a vigorous and rapid growth.

Now, if the weakly tree is cut down and grafted with a slip from its vigorous neighbour, then the old root and stem immediately develop into a vigorous and progressive tree, the stem remaining being of the same kind as the delicate tree.

But it may also be shown that a worn-out tree may be regrafted with the same kind, or with a cutting from near the tip of one of its own removed branches; and immediately the exhausted stem puts on new and vigorous life, developing all the vitality of a thriving young tree. How much this is like changing to a young queen in the hive.

I had a very old pear tree, with branches apparently dying, and the little fruit that set was always blighted and soon dropped off. In fear that some hundreds of young pear trees in the orchard might become affected, I was almost persuaded to destroy the old tree.

Without using any curative wash, I plied the roots heavily with a suitable manure, when the tree responded by developing new wood, and now bears so heavily that the branches almost break down with the weight of sound fruit, no disease whatever being evident.

A tree that becomes stagnant—incapable of active growth—is always more subject to fungus and other complaints; but if so treated that it is developing to its fullest extent, its various enemies rarely thrive upon it. A similar thing happens in the case of bees, and it is only through neglect of the first principles of recupera-

tive vitality that any stock is ever lost by disease.

One other thing: Mr. Heap wishes me to tell him how any germicide can penetrate the "impermeable chitinous covering of a bee," and so reach its internals. I was not aware that the bee had an impervious covering; but will Mr. Heap tell me why a germicide used in solution can, and does, in fact, permeate the whole internal economy of the bee, which is of a nature peculiarly absorbent? And does he know why a paralysed bee, vainly struggling in the heat of the sun to regain the use of its wings, may be enabled to fly freely simply by holding it in the warm closed hand for a few seconds?

Does he overlook the fact that the body of the bee is studded with breathing tubes, and that the hard shell-like coverings of the abdomen are not continuous but sectional and telescopic, while on the underside of the body the scales are slighter and even more sub-divided?

If he will place a bee in water he will see how little the "chitinous" covering prevents the rapid swelling of the body to nearly double its normal size. If Mr. Heap has used an inefficient rubber spray, it is quite possible he has been unable to saturate the bodies of the bees so that he would reach any internal spores or germs of disease; but after all there is nothing to equal recuperative treatment and efficient ventilation.

I may say that where it appears desirable to use a cure or preventive in the shape of a germicide in solution, the plan I advocate is not simply spraying, but that of *saturating* the bees short of drowning them.

Not only does the solution penetrate beyond the supposed "impermeable chitinous" covering of the bees individually, but the whole colony immediately sets up a merry hum, while the bees set about licking each other clean. Thus no matter what the disease may be, it stands little chance where the solution is operative in a double sense.—Saml. Simmins, Heathfield, December 20th, 1912.

RACES OF BEES.

[8640] In common with many others who aim at procuring the best possible bee, I have experimented with foreign races, only after trials extending over some years, to decide to clear them out entirely and keep to "blacks." It has been stated frequently that both Italians and Carniolans are more resistant to disease than are blacks, that they work earlier and later, gather from flowers not frequented by black bees, and can cope with wax-moth better. In America the black is almost universally condemned, but it is well to note that Mr. E. R. Root, the Editor of *Gleanings*, states that he has reason to believe that our English blacks are superior to those found in America. With regard to the power of resisting disease, this appears to me to be more a matter of vigour than race. In the Board of Agriculture report upon "Isle of Wight" disease (Page 128), it is stated "that immunity does not appear to be correlated to colour or race, since black, yellow, leather-coloured and hybrid bees are reported to have escaped the disease in different districts." That Italians are out earlier in the day I have heard several bee-keepers say, but it is not quite clear to me that this is altogether desirable, as they would run some risk of getting chilled in the cold morning air, and I do not think wax-moths will be any serious trouble so long as stocks are kept strong.

I have found Italians to winter well, build up into good stocks early, and store satisfactorily; but they do not cap and finish their honey as nicely as do blacks, and on this account are unsatisfactory for section work. I consider, too, that they are more inclined to swarm. When pure they are usually gentle, but crossed with blacks produce almost invariably vicious bees. My Carniolans have wintered well, built up early into grand stocks, but have, as a rule, superseded their queens during fruit-bloom, swarming, when allowed, with the first hatched queen. Whether this is due to Carniolans being naturally short-lived, or to the queen being prematurely worn out by excessive laying, I do not know; but the result is that when the young queen gets mated, she gets so much brood started that practically all the income is consumed as harvested in caring for this too numerous family. They cap their honey nicely, and when pure are very gentle, but crosses produce the most excitable bees I have handled. I have blacks which winter well, build up into strong stocks and in good time, gather nectar if it is to be had, cap and finish their honey beautifully, and are certainly much more pleasant to handle than most crosses. In weight of honey produced they compare with any. I intend in the future to rear queens only from stocks of proved superiority, to take care that those queens are reared under favourable conditions, to rigorously weed out all whose bees have not given a good account of themselves, and in this, taking no account of age. Working on these lines I am confident that improvement will result. Dr. Miller, in America, states that following this plan he notes a marked improvement; whilst in Switzerland great progress is reported. What has been done in other countries can be done here in England.—H. H. Brook, Altrincham.

BLURTS FROM A SCRATCHY PEN.

[8641] Friend! Yes friend Crawshaw. I cordially accept that title. That is where we *do* agree. In *friendly* joust, we break lances, but it is all in friendship, and when we do meet, which is much too seldom, to me it is a pleasure. But a game is stupid if the play is all on one side, therefore I am compelled to differ with "Friend" Crawshaw in his conclusions and even in his phrases. "Fall out" is one of these. This I always endeavour to avoid with my friends, and I hope I have some. However, my difference with Charles Abbott (whose memory and virtues I revere) was very much more in sorrow than in anger. I cannot associate "master" with bee, a hyphen may join the two words. Other union there is none. The expression is too harsh, too expressive of physical force. This word was here chosen to designate a complete knowledge of the science of bee-keeping, and for this purpose I maintain that it is a failure. We are sadly in want of a fitting word, "Bee-expert" is too clumsy. "Apiarian" is better, and wanting something better, had I been on the Council of Nomenclature, I should probably have suggested it. Flock-master, horse-master, why forget task-master and slave-master, they are all too resonant of the crack of the whip to be to my liking. True the painter, the prose or poetical writer and the sculptor are "Masters" of their several arts. But this is an achievement of the mind and is an honour. The other mastery inflicts a kind of degradation, the master, that he has to use compulsion, the mastered, that he has to submit. We lead our insect friends, we indicate to them our wishes as best we can, and they are sapient enough to follow. Except a puff of smoke, we use no force, and even that is more as a warning signal. So far, my explanation why "master" seems wrong to me. It is a false flag, and equally "conductor" offends. Granted it was an anxious time for those who guided the first footsteps of the JOURNAL they were troubled lest it should never walk, they little dreamed of its future pace in after years, but in doubtful circumstances to hesitate is to be lost. It is courage which succeeds. *L'audace, et encore l'audace, et toujours l'audace.* Boldness, and again boldness, and still again boldness. To me it seems weakness that the name of "Editor" should have frightened. It was a title honourably merited, why not bear it?

In the fifth number of the first volume occurs a letter very interesting because of the writer, and historical because it is the first appearance in the columns of the BEE JOURNAL of a contribution from "F. Cheshire." When one looks over the list of literary giants who have written for our journal, one feels a consciousness of the honour that is done to us in being of such goodly company. The "Fact for Naturalists" which he gives us, had it been written by any ordinary man, would have been accounted for or not considered worthy of attention, because of some possible error of dates or of observation. But it is different when it arrives from one pre-eminent in bee-craft, whose name among students of apiculture is familiar as a "household word," and whose notice of minute detail is akin or even superior to Huber. Necessarily abbreviating it is as follows:—

"The queen of a cast of May 15th never laid an egg, but died on June 3rd. On June 6th at 9 a.m. a new queen was released in the hive. On the 7th eggs were present (Friday). On the following Friday about fifty cells were sealed; eight days, eight hours, after liberation of the queen. The hive was opened Thursday, June 25th, several newly-hatched bees were seen, one crawling out while under observation, nineteen days, eight hours having elapsed since the queen was freed, and the question is asked 'Does the time vary with different queens, or did the eggs which the queen would have laid earlier, had she not been caged, continue to mature in her oviduct?' and in humility, F. Cheshire asks for 'some whose opportunities for observation are greater than mine to give their experience.'" Is there anything to be said at the present day on this subject? Looking over later numbers, I do not see that anyone replied to him. But it would interest now.

A notice of the Bee and Honey Show at Manchester in that year appears in No. 6. A Mr. Breen of Arwick, near Manchester, exhibited "a glass super of the enormous weight of 87lbs." So impressed with it was the Rev. W. C. Cotton that he there and then bought it for £10. It is mentioned that the above is the net weight of the "pure virgin honey," and therefore it works out at nearly 2s. 4d. per lb. Evidently this reverend gentleman was earnest in his philanthropic support of bee-keeping. Now it so happened that 1873 was one of the worst years on record for honey gathering, and as the next super in weight only equalled 40lbs. and this not in competition, it was considered "most surprising." Explanations naturally followed, and (it is allowed to historians to raise the screen) in No. 8 is a full and complete confession as to how it was done. "Given an exhibition, a bad season, limited time, and a glass larger than was ordered and bound to be filled, how was it to be done?" Mr. Breen's reply, condensed, is "By feeding and feeding with honey, pure and simple." So loosely worded were the rules that the prize fell to the heaviest. It was in the hood. Putting aside the question

whether it deserved the highest honours or not, and whether or not it was legitimate to "fake," the super must have been a noble object such a mass of comb and honey, but rather cumbrous to deal with in glass.—J. SMALLWOOD.

UNHEALTHY POLLEN.

[8642] On behalf of the readers of the JOURNAL, I wish the Editors and all good bee-keepers a Happy and Prosperous New Year.

The one thing needful is good weather, and looking back some fifty years, I cannot remember a winter so mild as the present one up to now, as the bees were flying the last day of the old, and the second of the present year.

The weather decides whether it is to be success or failure with many, particularly bee-keepers; but do we really realise to what extent it affects us?

Supposing we have a sudden change from heat to cold in the spring, a bad blight follows, affecting the fruit trees, making them look scorched up. In my opinion it converts the healthy, virile, penetrating grains of pollen, into unhealthy, diseased and *parasitical* ones, and that these will be found eventually to be the cause of the *Bee Blight* (? "Isle of Wight" disease). After breaking up old combs and soaking them in water for a time, I have seen plant-like life appear, exactly similar, apparently, to the parasite described and illustrated on page 319, Nov. 8th, 1912, the *English Mechanic*.—DAVID HANCOX, Oxon.

BEE ASSOCIATIONS AND THEIR WORK.

[8643] When I wrote about the Staffordshire B.K.A., it was with a desire to attract attention to the lethargic condition of that Association at the present time, compared with the energy displayed for a number of years after its formation.

Evidently the matter is more serious than I anticipated as your correspondent, Mr. Jacques, page 507, "B.B.J." December 19, says he "found much indifference amongst the bee-keepers of his neighbourhood," a district with which I am not acquainted.

I presume Mr. Jacques is a new member, as his name does not appear in the last report, consequently he does not yet know all the subtleties of the Association's work. His remarks demand a fuller explanation from me, and with the Editor's permission I will show what I consider as the cause for this indifference.

It is a recognised fact that all Associations depend for their success on the energy and tact of their two chief officials, viz., the secretary and expert. Personally, I consider the latter person the most important of the two, because the touring expert is the one who *should* come in contact with all the members.

In the good old days of Mr. Robert Cock, we had a *practical expert* who did not abuse his position by neglecting to pay visits, or dabbling in bee literature of the class which crosses St. George's Channel. Certainly a temptation for any expert whose only method of getting known is a free pictorial advertisement of himself and his doings.

The free distribution of such literature in the county formed no part of his work as it does that of his successor. Neither did he write incorrect reports disloyal to the parent Association.

No, his was true expert work, done unassumingly; he was the friend of all bee-keepers, and those who knew him revere his memory and appreciate the help he gave them with no thought of self-aggrandisement.

The methods now pursued may suit a few, but they disgust the majority, and the Association suffers through loss of members, who see no benefit in return for the subscriptions paid.

Mr. Jacques points out that the expert's visit is not obtained unless the member writes and asks for it. Let us consider the position.

According to the report of the Association, the County Council make an annual grant of £40 for *Expert's Salary*. This is nearly one pound per week, and is money taken from the rates. This being the case, I maintain that every bee-keeping ratepayer in the county of Staffs is entitled to, and can claim, a visit from the expert, whose salary he helps to pay, whether he is a member of the Association or not. In several counties this is one of the conditions enforced by the County Council when giving a grant to the local Association.

I affirm that the sole cause of the deterioration of the Staffs Association is the lack of *efficient* expert work. This will remain while the present mode of working continues, *i.e.*, the employment of an expert who is otherwise in regular employment, and can only do the expert work at odd times, such as evenings and Saturdays, and who, though a *paid official* of the Association, has a seat on the committee, and can hear and vote on any matter reported confidentially or otherwise connected with his work.

Let the Staffs Association follow the procedure of those Associations which are doing the best work, and employ an expert to tour the county thoroughly, visiting every bee-keeper possible, *i.e.*, devote say two months in the spring and two months in the autumn entirely to the work. The membership will then go up by leaps and bounds. I know of what I speak as I mix

considerably amongst bee-keepers in the county.

The matter of expense cannot be advanced as an excuse for not doing this, the County Council already give a grant of £40. I also notice from the report that for a number of years the Association has lost an average of £10 per annum on the annual show (how and why I cannot understand), let them cut this expense (for only a few benefit from it). Then the expenditure on shows could be reduced another £8, leaving in the hands of the Committee £58, which is over £3 10s. per week for an eight weeks' tour (spring and autumn) by an expert. There are many experts in the county who, for this sum, would only be too pleased to undertake the work and give the few necessary lectures in addition.

I have clearly shown that the matter rests entirely in the hands of the members, and sincerely hope they will wake up to their responsibilities. Let them attend the annual meeting to be held shortly, when the officials are to be elected, and only appoint those who will run the Association for the purpose for which it was founded, *i.e.*, the benefit of the members, and so save a valuable Association from destruction. I enclose my name and address and again sign myself.—A STAFFORDSHIRE BEE-KEEPER.

A REPORT FROM THE ISLE OF WIGHT.

[8644] I was pleased to read Mr. Mace's letter, "Kill or Cure," in "B.B.J.," January 9th, page 15. I agree with him that we ought not to destroy a stock when disease appears, but try some remedy. The beginning of last season, 1912, my bees were all healthy and had been so since the early part of 1911. On April 29th I supered most of them, one specially strong stock on twelve frames had almost filled the super by May 8th. I was about to put on a second when a large swarm came off, which settled on an apple tree rather high up. I had to hold the skep over my head, and when shaking them off a great number of bees missed the skep and came on my head. I was clothed with bees from head to foot. I placed the skep on the ground and stood till all the bees had left me. Here, in this swarm, appeared the first sign of "Isle of Wight" disease, on my clothing. I put the bees into a new hive dressed with Ayles' remedy. They quickly built out the eight frames, which I increased to ten; they then began dying in large numbers. I transferred them to another hive dressed as before, when they improved, and throughout July did well, filling the ten frames with brood and honey: I put on a super and got fifteen finished sections. Again I transferred them into another dressed hive. Now we return to the parent stock, which had shown no sign of disease; this sent off a cast on the 22nd, which also was put into a dressed hive, but a few days after it was so badly affected that it was reduced to a mere handful of bees in about ten days. I transferred them into another hive, when they built up and got quite strong by the end of July. After this cast came off I broke up the parent stock, taking six frames with bees and queen-cell, putting them into another hive. Both lots did well, and at the present time are strong and quite healthy, having shown no signs of disease at any time. The two swarms were given a cake of candy and covered up for the winter, apparently cured, but towards the end of October they began dying in large numbers, and are now both dead. Had I destroyed the swarm and parent stock I should only have got the eighteen sections finished before swarming. Now I have two good stocks of healthy bees, having obtained, in addition, the fifteen finished sections and about the same weight in extracted honey from the brood-chambers where bees died. All my other eight stocks appear to be quite healthy.—T. P., Ryde, Isle of Wight.

BEES IN KASHMIR.

"In the sides of the houses in the villages, we see a circle with a hole in the centre, into which bees are seen to be crowding. These are the Kashmir hives. They are merely earthenware cylinders, about 2ft. long, and built into the wall. The outside end of the hive has a central hole about an inch across, or sometimes a series of small holes in a circle. The inner end has an earthenware lid fitted over it, and sealed with clay. No artificial feeding is done in the summer, but in winter the bees are supplied with food. No special measures are, however, taken to protect them from the cold, and the mortality is often very great.

"In many villages, after a severe winter, when the temperature sometimes falls to zero, Fahrenheit, more than three-quarters of the colonies will perish. Under favourable conditions, strong colonies are formed. Early in May the swarms issue. One hive may give off as many as six, weighing from 2lbs. to 4lbs. each. The villagers usually expect the swarms to settle and hive themselves in one of the numerous wall hives. The bees are not accustomed to English hives, and it is extremely difficult to retain them. In many cases it is advisable to fit a strip of queen-excluder zinc across the entrance to prevent the queen from leaving. Usually this can be safely removed after two or three weeks, but I have frequently lost swarms in spite of this precaution. One

colony left the hive and deserted its brood two months after it had been introduced. This was, however, due to persistent attacks of bee-robbers. Where Kashmir bees are kept in wooden hives there seems to be an unusual amount of fighting and robbing.

"The local earthenware hives do not appear to attract outsiders. Hornets, however, are often seen attempting to get in. The wooden hives, perhaps, emit an odour from their joints, for they are pestered by hornets, worried by robbers, and sometimes in the spring a swarm will descend upon an already occupied hive.

"The Kashmiris understand something of the management of queens. They sometimes secure a restless queen by tying a fine thread to one of her legs and pinning her to the comb. Sometimes, too, they change queens, and they cut out queen-cells quite cleverly. Two harvests may be obtained, one in June and the other in October. The back of the hive is opened and smoke is blown in, and the combs are rapidly cut out. The bees are gentle, so comparatively few are killed. No proper care is usually taken of brood-combs, and insufficient supplies are often left for the survivors. Sulphur is, however, not used. The bees are wonderfully tame; I have often manipulated them without the use of any subduer. As in Europe, there appear to be two chief varieties—the yellow bee and a darker kind.

"In the yellow variety there is a fairly broad transverse stripe on the back, with four parallel pale-yellow bands below. The ventral surface of the abdomen is yellow, and the thorax is covered with light-brown fur. The lowest stripe is a little broader at the middle, which makes the bee look as if it had a white tail. The wings, when folded, reach to the lower margin of this stripe. Wild bees appear to be yellower and to have slightly longer bodies than the domesticated varieties. I have seen them as high as 12,000ft. above sea-level."—Dr. E. Neve, in "Beyond the Pir Pymjal." Transcribed by Miss Harker.

RANDOM JOTTINGS.

By Charles H. Heap, Reading.

The "blurts" from Mr. Smallwood's "Scratchy Pen"—no one seems to have taken the hint and presented him with a nice fountain pen at Christmas—have been particularly interesting to me by reason of the fact that the volumes from which he has made so many pleasing extracts belonged to John Walton, of Honey Cot, Weston, Leamington. I never had the pleasure of meeting Mr. Walton; but it was from him that I ordered my first swarm of bees fifteen years ago next April or May. There was a spirit of breezy optimism in the letter I received from the Honey Cot, which increased my new-born enthusiasm. The bees at Weston did not justify Mr. Walton's anticipations, and June was half spent before I became a bee-keeper. How well I remember my wife telling me, with the eagerness of one having good news to impart, that the bees had come. We were then living among the bricks and mortar of Leeds, a little more than half a mile, in a bee line, from the open fields at Meanwood. I had had no previous dealings with bees, and had never seen bees handled. Fearful lest the little insects should annoy the neighbours, we decided to turn our front attic, which had a dormer window, into an apiary. I got one of William Dixon's good guinea hives, a smoker, and a veil. I paid a shilling for the veil, which I have regularly used until the end of last season, when it ceased to be bee-proof.

That swarm of hybrids John Walton sent me were a source of wonder to the neighbourhood. I got no surplus, of course, but they gathered enough, or nearly enough honey to carry them through the winter. I hived the swarm successfully by shaking them into the top of the hive; but on looking into the brood-nest a few days later I found that the foundation in one or two frames had given way. As I had carefully read Mr. Cowan's "Guide Book," I knew it would not do to allow matters to remain like that, so I pulled the frames apart and boldly but cautiously removed the fallen foundation, straightened it out, fixed it in the frame again, and returned it to the hive. In the autumn I tackled bee-driving, and so secured another stock. I joined the Yorkshire Bee-keepers' Association the next year, and in the hon. secretary made the acquaintance of Mr. R. A. Grimshaw, the inventor of Apifuge, who was at one time a regular contributor to the Bee Journal. Those were happy days, and I rejoice that amid life's ups-and-downs I have never lost my enthusiasm for the busy bee. John Walton's "English bees, crossed two or three generations ago with Ligurian," will always remain a pleasant memory.

An Unanswered Question.—Mr. F. Wooldridge, of Winchcombe, in the "B.B.J." for December 5th, very kindly attempted to come to the rescue of Mr. S. Simmins, who I am accused of "having picked to pieces." Mr. Simmins may be, as Mr. Wooldridge says, "one of our ablest and oldest apiarists"; but when one of our oldest apiarists writes articles which may—without any wrong intention on his part—seriously mislead inexperienced members of the craft, it is time for some one to offer adverse criticism. I hope Mr. Wooldridge has taken the advice of the Editor to study the report on "Isle

of Wight" disease published by the Board of Agriculture. If he has, he will understand how futile the "suitable germicides" must be. "Mr. Simmins," writes Mr. Wooldridge, "offers prevention and resuscitation; the Board of Agriculture, cremation." Let me add that the offer of the Board of Agriculture, if accepted, will result in the smallest loss. When I criticised Mr. Simmins's "More Self-Help Wanted" articles, I asked an important question, which remains unanswered.

Belated Wasps.—On December 30th, I saw a wasp several times enter and leave one of my hives. It had the slim body of a worker and was as nimble as a wasp in August. I have been told of a wasp having been slain in one of the main streets of Reading since the advent of the New Year. Worker wasps ought to have been dead long ago; but it was rather hard on the Reading specimen that after surviving Christmas Day she should have met with a violent death. I hope the one I encountered still lives; she cannot do much harm anyhow—and life is sweet.

A Warning Photograph.—The interesting photograph (page 9) from "E.F.B.," of Louth, should act as a warning to all negligent bee-keepers. I have, however, seen a worse specimen. The bees had died, and the larva of the moths, possibly assisted by mice, had not only destroyed the combs, but frames and sections as well. The work of destruction had been so thorough that there was not a particle of wax left. Hives in which moths, either through accident or neglect, are allowed to breed in such profusion, are pests to the neighbourhood in which they happen to be. At an apiary which I visited last summer the owner's wife was in great distress because of the trouble they were having with the moths. She told me they kept their hives and bees clean. This was the truth; for there was ample evidence that the apiary was tended with very great care. I gave what comfort and advice I could, and I noticed that the good woman's mind was eased when I told her the trouble was due to no fault of her husband; but was in all probability owing to the carelessness of some keeper in the neighbourhood.

[In fairness to Mr. Simmins, we must say that his reply to Mr. Heap's questions (see page 22) has been held over since December owing to want of space.—Eds.]

Queries and Replies.

[8575] *Suitable Position for Apiary.*—I shall be obliged if you will advise me in the following matter:—I have six hives of bees, five of which stand near the house. They face south, and are sheltered from the north, but are exposed to the full force of a very strong west wind. My sixth hive (a skep) I have put in a sunny corner of the orchard, a little distance away, sheltered from the north and west winds. The Association expert thought it a very good position, except that being so far from the house I should be liable to lose my swarms. This, of course, I do not want to do. Would you advise me to run the risk of this by keeping all the bees in the orchard or leave them where they are exposed sometimes to the full force of a gale? (2) When the expert made his autumn visit he said my bees had *plenty* of stores for the winter, though in one or two hives I *might* put a pound of candy as an extra precaution. About a fortnight ago I happened to look into these hives and found every bit of candy gone. Does this mean that the bees were short of stores, or that they took the candy in preference to the stores in the combs? If the former, was it because owing to the mild season breeding had gone on so late that their stores were used up quicker than the expert anticipated? Thanking you in anticipation.—RADNORIAN.

REPLY.—(1) You should put up a shade of some description on the west side. Let the skep stay where it is. If even you lose a swarm you will reap the advantage of fertilisation of the fruit blossoms in your orchard. (2) Bees will often eat the candy in preference to their own stores, but the consumption may have been caused by late breeding or shortness of food. In any case, put on more candy when it has been eaten.

[8576] *Selling Honey.*—Would you be so kind as to give your opinion of the enclosed sample of honey:—(1) What I should charge in 1lb. jars wholesale, and also retail? (2) Would it be good enough to exhibit at a honey show? (3) What is the size of sample jars, and how are they sold, as I have some difficulty in getting these? (4) If I am not asking too much, would you give me a recipe for a honey-cake?—THOMAS WORDIE, Renfrewshire.

REPLY.—(1) So far as colour goes the honey is good, but it is rather thin. We cannot say anything about the flavour and aroma, as the strong remains of the previous contents of the bottle prevent this. (2) If of good flavour you ought to get 9s. 6d. to 10s. per dozen jars wholesale, and 1s. per jar retail. (3) Any appliance manufacturer will supply you with sample bottles, which range in size from one to two ounces. (4) Sorry we cannot find space for recipe but the book on "Preparing Bee Produce for Shows," by Mr. Herrod, gives a number of recipes.

[8577] *Questions about "Isle of Wight" Disease.*—I commenced taking your Journal last year, and I look forward to it each week with pleasure. I am only a beginner in bee-keeping, but I wonder if my experience will interest you. I purchased a stock of bees (price 35s.), a new "W. B. C." hive, smoker, excluder, and last, but not least, the "British Bee-keepers' Guide Book." I insisted on a written guarantee from the dealer that the bees were clean and healthy. One month after delivery, they swarmed, and seven days later both swarms and stock were dying in hundreds from "Isle of Wight" disease, as diagnosed by Dr. Malden, to whom I sent some of the bees. I treated two other hives with a cure advertised in your Journal, and transferred the bees to these. The stock died in about three weeks, the swarms dwindled very much, and when I sulphured them (to make room for more) I found all stages of brood, so I feel sure if I had left them alone they would have recovered. Whilst these two lots were struggling in the clutches of disease I captured two good swarms from hedges near my place. I cleaned and treated my diseased hives with a cure and hived the swarms in them. On December 28th (a very mild day), both stocks were flying in hundreds and seemed to be well and strong. I am not doubting the honesty of my dealer in supplying the bees but for my own satisfaction I should like to ask a few questions:—(1) From the first day after receiving the bees there were dead and crawling bees about the hive, and watching the hive one day about seven days after delivery, I saw a drone come out of the hive on its back, beating with its wings till it got to the edge of the alighting-board; it then burst, a mass of yellow matter coming out and sticking it fast to the board. Both before and after this I had been watching the bees drag out drones and drop them on the ground. Can you tell me what this means? (2) The day before the stock swarmed the bees were hanging about the hive in thousands. I consulted my dealer and he advised more room and ventilation. I put on another section-rack, and raised the front of hive ½in. Do bees usually swarm before taking the disease in an acute form? (3) I have two section-racks, one drawn out, the other untouched. Can they be disinfected or is it best to burn them? I have made some more hives after the "W. B. C." pattern, and I am going on with the bee-keeping, and I hope to do better next season. Wishing the "B.B.J." every success for the coming year.—H. L., Sutton Coldfield.

REPLY.—(1) The drone was suffering from "Isle of Wight" disease. (2) A swarm will often show distinct signs of disease after it has come out, while to all appearance the stock remains healthy. (3) You had better burn the supers, and if you use the hives again this spring the greatest precaution must be taken to thoroughly disinfect them and the ground upon which they have been standing.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

J. H. (Slaithwaite)—*Value of Beeswax.*—The wax could be made into foundation. It is worth 1s. 3d. to 1s. 4d. per lb., in its present condition.

S. L. H. (Walthamstow)—*Dead bees on alighting board.*—The death rate is normal, and we do not think there is any disease in the hive.

S. A. B. (Grantham)—*Stimulative Feeding.*—1. You should have fed slowly, but given a continuous supply of syrup, then you would have got more brood. 2. Communications should reach us by Monday morning of the week of issue.

Suspected Disease.

F. H. (Harrow)—The bees show symptoms of "Isle of Wight" disease.

M. W. U. (Farnham)—The bees were too dry for us to examine them properly.

N. A. (Hants.), W. H. C. (Etchingham), M. C. (Worthing), Mrs. Sharp (Wealdstone), R. I. (Gateshead), and H. W. R. (Grantham).—The bees have died of "Isle of Wight" disease.

G. W. (Staffs.)—The bees have died from starvation. We should not advise using the combs; melt them down for wax.

E. L. (Ewell) The bees were too decomposed for examination.

F. S. F. J. (Warmsworth)—The comb contains nothing worse than granulated honey.

W. R. A. (S. Norwood)—The bees were too dry and mouldy for diagnosis.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

FINEST pure light Kentish Honey; sample, 2d.—HOPKINS, Woodland Apiary, Lyminge, Folkestone. v 45

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at 23, Bedford Street, Strand, London, W. C., on Thursday, January 16th, 1913. Mr. C. L. M. Eales took the chair until the arrival of the vice-chairman, Mr. W. F. Reid. There were also present Miss Gayton, Messrs. J. Smallwood, T. Bevan, R. H. Attenborough, E. Watson, J. B. Lamb, O. R. Frankenstein, E. Walker, A. Richards, Captain F. Sitwell, and Sir Ernest Spencer; Association representatives, Messrs. Tickner Edwardes (Sussex), G. J. Flashman (Barnet), G. R. Alder (Essex), G. W. Judge (Crayford), and the secretary, W. Herrod.

The minutes of the previous meeting held December 19th, 1912, were read and confirmed.

Letters expressing regret at inability to attend were read from Messrs. T. W. Cowan, A. G. Pugh, H. Jonas, and Colonel H. J. O. Walker.

The following new members were elected:—Miss S. H. Frith, Mr. A. H. Breach, and Mr. W. J. Sanderson.

An application was received from the South Australian Bee-keepers' Association for affiliation, and the same was granted.

The following nomination of representatives from Associations were received and accepted: Bedford, Mr. F. Moore; Crayford, Mr. G. W. Judge; Crystal Palace, Mr. C. L. Pinker.

The report of the Finance Committee was presented by Mr. Smallwood. The payments into the bank for December amounted to £36 3s. 2d., the balance at the bank at the end of December was £190 16s. 8d. Payments amounting to £5 were recommended.

Captain F. Sitwell lectured before the Council for the first-class certificate, and succeeded in passing the test.

It was proposed by Sir Ernest Spencer, seconded by Mr. Smallwood and carried, that the Secretary should represent the Association on the Council of the British Dairy Farmers' Association.

Suggestions for the rearrangement of examinations were received and read from Mr. T. W. Cowan, and Col. H. J. O. Walker. It was proposed by Mr. Watson, seconded by Mr. Frankenstein, that a committee be appointed to deal with the matter.

It was resolved that Sir Ernest Spencer, Mr. Lamb, Col. Walker, and Mr. E. Walker be elected as a committee to make definite recommendations as to experts, and to report as soon as possible.

The agreement with Mr. Herrod for his appointment as curator and lecturer at the Zoological Gardens was read and approved.

The report upon the Second Class Examination was presented, and it was resolved that certificates be granted to the following: Mrs. E. Bissett, Misses E. Gardiner, H. Rigby, D. Dowding, S. A. Gibson, H. F. Leaver, Messrs. H. H. Brook, T. Alun Jones, F. Kelly, E. W. Franklin, W. H. Windle, B. Blackbourne, J. Wakerell, H. E. S. Viner, J. G. Dalzell, H. Goude, C. H. Rivers, E. Watson, G. R. Alder, E. B. Blaker, J. Bray, P. W. S. Jefferies, G. J. Flashman, J. Johnson, W. G. Goddard, J. Brown, A. Low, J. R. Craik, F. A. Woolley, C. H. Bocock, Rev. W. E. Mallinson, and Dr. D. Wardleworth.

The Secretary reported the receipt of the following books as gifts to the Library, and it was resolved that the thanks of the Council be given to the donors:—

Tickner Edwardes: "The Lore of the Honey Bee," in Dutch.

Miss A. D. Betts: "A Beehive Fungus, *Pericystis Alvei*" (two copies), "The Fungus of the Beehive," by Annie D. Betts, B.Sc.

T. Bambridge Fletcher, F.E.S., F.Z.S.: "A Simple Honey Extractor," "The Wax-Moth," "Economic Entomology," all by the donor.

T. W. Cowan: "The Bee Cultivators' Assistant," by Matthew Pile; "The Bee-keepers' Practical Note-Book" (second edition), by T. W. Cowan.

F. W. L. Sladen: "The Humble Bee," by F. W. L. Sladen, F.E.S.

Colonel Walker: "Duration of Life in the Queen, Drone, and Worker of the Honey Bee," by J. G. Desborough; "The Anatomy of the Honey Bee," by R. E. Snodgrass.

Leaflets: "The Treatment of Bee Diseases," and "The Occurrence of Bee Diseases in the United States," both by E. F. Phillips, U.S. Department of Agriculture.

Next meeting of Council, February 20th, 1913, at 23, Bedford Street, Strand, London, W.C.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By George Hayes, Beeston, Notts.

HOW TO STUDY POLLEN GRAINS.

(*Continued from page* 13.)

Olive Oil. One penny per oz. Pollen grains put in this medium rarely alter their form as they do when put into watery liquids, and as it makes them transparent their form is seen better.

Formalin. One ounce of a 40 per cent. solution—the usual commercial standard—is obtained, costing twopence; to this add 6ozs. of pure (distilled) water, making

in all 7ozs. This is a good preservative for both pollen grains and other vegetable tissues.

Honey without pollen grains. I have tried nearly every kind of preservative for pollen grains, but have yet to come across anything to excel honey itself; nor is this to be wondered at, seeing they are so closely related, and that good honey, under proper care, will keep indefinitely. All honey obtained from the bees contains a considerable number of pollen grains from various flowers, so that unless they are removed they would cause confusion if we put into it any particular kind of pollen grain we wished to study. It is therefore necessary that we should take a small quantity of honey, and rid it of the pollen grains it contains, so that it shall only hold those we put into it. As we only require a very small quantity for each kind, it will be sufficient if we treat ½lb. of honey, preferably of light colour. To this add 6ozs. of water which has been boiled and reduced in temperature to 100 deg. F. Mix well and strain through filter paper, or failing that, white blotting paper, then evaporate in a water bath to its proper consistency. If you have no water bath, one can easily be improvised by taking a shallow tin tray or pan and a tea-saucer, put the honey—or a portion of it—into the saucer, place this on two strips of wood ¼in. square in the tin tray, fill up with water to near the rim of saucer, place all on slow stove and keep hot until it has evaporated sufficiently.

Small Test Tubes. These cost fourpence per doz., and are used for storing pollen grains preserved in formalin or honey. They are about 2in. long and ⅝in. diameter, and must have corks to fit. As these glasses are very thin they are apt to break as they are being corked up, unless the cork has first been softened by tight rolling between the thumb and finger, after which it will go in like a bit of sponge.

Labels. A twopenny packet contains a good number. They should be oblong in shape, 1in. by ¾in., or even the plain edges from sheets of stamps will do, but, of course, do not *look* quite so neat. They are used for labelling each test-tube and slide, for everything should be labelled to avoid confusion.

Trays. These are for holding and storing away prepared slides. They vary considerably in form, material, and price. They may be purchased ready made, as will be seen by consulting catalogues. My own trays are cheap and I make them of cardboard as required, and the trays all fit inside a cardboard box with a falling front and a hinged lid, so that all are kept together safe from damage and free from dust. I went to a box-maker and got him to cut me from *stout* white cardboard a number of pieces 11½in. by 3½in. to form the bottom, and double the quantity of strips 11½in. by ⅜in. wide for the edges. When I got them I took an 11in. by ⅜in. strip and glued it along and flush with one edge of the tray; then I took a second strip and cut off 3 lengths 3in. long each and glued one along and flush with each end of tray, and one just in the centre for a support, this gives room for five slides on each side of the centre or ten for the whole tray. These, of course, can be made up as required. The box to take these trays would have to be 11⅝in. by 3¾in. inside measurements, and about 4in. deep. This would hold about 18 trays or 180 slides, trays, of course, being placed therein one on top of another. The cost for the whole lot would be about 1s. 6d. or 2s.

Tweezers. Cost 6d. These, I think, are too well-known to need description here, but they are always useful in this and all work in connection with the microscope.

Collecting. The first thing one must remember in research work is, that we must avoid contamination, so that in collecting pollen grains we must be careful to get our pollen from the flower *pure*, that is, free from other pollen grains, and other matter which may be carried into an open flower by either insect or wind, or which may have dropped into it from some overhanging flower of a different species. Suppose we have been out into the fields and in our vasculum or box, we may have half-a-dozen different kinds of flowers, and in this way, again, the pollen grains are apt to get mixed. That they should be pure is most essential, particularly for a beginner, and although after a time one gets as familiar with the grains as with the flowers, even then, if we are to be thorough, it is much better to get them pure, and to make quite sure of this I usually proceed in the following manner.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

FLIGHT OF BEES.

[8645] The letter of Colonel Walker [8633] in "B.B.J." of January 9th, reminds us that there are still many problems with regard to the anatomy of the bee which require working out.

Here is one which I bring forward with the greatest diffidence, in the hope that

someone will either prove me to be wrong and show conclusively where, or that on the other hand they will support me with greater scientific proof than I am able to do.

In the "Honey Bee," page 45, we read: "With these and other movements the bee is able to fill its air-sacs and so alter its specific gravity as to enable it to fly as explained." On page 55, under the heading "Respiration," we read the same thing. The idea intended to reach the student seems to be that by inhaling air into the tracheæ the insect is made lighter than previously, and so has to expend less muscular effort to sustain itself in the air.

I allow that by inhaling air the insect has a less specific gravity, but specific gravity means relative weight, bulk for bulk, with water. In this case we are not dealing with a body immersed in water (when the inference drawn would follow), but with a body in air. I submit that the actual weight in air remains the same after a bee has filled its air-sacs, as before the operation took place. The question I wish to ask is: "By filling an elastic body with the fluid in which it is immersed, does the relative weight of that body become less or does it remain as it was?" A scientific answer to that question should settle the point whether by extending its tracheæ with air a bee reaps any mechanical advantage to aid it in its flight.

Should it not rather be that by the means mentioned, the blood is aerated more rapidly and thus help is given to enable the bee to sustain more readily the muscular exertion needed for flight.

I put forward these questions and suggestions, hoping that our senior editor, Mr. Cowan, will take them in all kindness, and that they will lead to a discussion which will elucidate the point.—D. Wilson.

[The specific gravities or comparative weights of different substances are the respective weights of equal volumes of those substances and this applies equally to all fluids, therefore to air as well as to water. That the specific gravity is lightened on the inflation of tracheæ and air-sacs is generally admitted, and was shown to be so by Newport in his work "On the Respiration of Insects," 1836, page 549, and also his work "On the Formation and Use of the Air-sacs and Dilated Tracheæ in Insects," 1847. The view had previously been set forth by Dr. Hunter "that the vesicles serve to enable the insect to alter its specific gravity at pleasure during flight, and thus diminish the muscular exertion required during these movements" (Dr. V. Siebold, "Anatomy of the Invertebrata," page 439). Professor Huxley in his "Anatomy of Invertebrate Animals," 1877, page 437, says the air-sacs assist flight in insects by the diminution of the specific gravity which follows upon their distension. M. Girard in "Les Abeilles," 1896, page 68, says on closing the spiracles after inspiration, the air remains in the air-sacs in order to reduce the specific gravity. Dr. Packard, in "Guide to the Study of Insects," 1870, page 42, says that in preparing for flight the air rushing through the opened spiracles "is extended over the whole body, which, by expansion of the air-bag, is enlarged in bulk and rendered of less specific gravity."—Eds.]

COMB-BUILDING IN DECEMBER.

[8646] I wonder if any readers of the "B.B.J." have had an experience like mine? I put a 1lb. bottle of honey on one of my hives about a week ago, under the quilts, because the bees were short of food, and on looking to see whether they had eaten it I was surprised to find the bottle empty, but comb made in three places in the mouth and stuck down tightly to the frames.—P. Hicks, Oxon.

[It is most unusual, and we have not heard of such a thing occurring at this time of the year before. It shows the mildness of the season.—Eds.]

THE COLOUR OF POLLEN.

[8647] With reference to Mr. Macdonald's notes on this subject in last week's "B.B.J." (page 21), may I suggest that perhaps the discrepancies in the accounts of the colour of heath and heather pollen are due to its great variation. (I had no space to mention this in the table, "B.B.J.," 1910, Vol. 38, page 456, which was, moreover, merely intended to point out the danger, mentioned by Mr. Macdonald, of assuming that a flower and its pollen are of the same colour; I therefore gave an average colour there.) The pollen of *Erica cinerea* may be quite pale grey, varying from this to almost black. This variation is largely due to the presence, in some of the loads, of portions of anthers, sand, &c. A great quantity of such "foreign bodies" is found in the dark-coloured loads, less or none in the light-coloured ones. The pollen of the ling (*Calluna vulgaris*) also occasionally contains portions of anthers; the loads vary from nearly white to a fairly dark grey, but are, on the whole, lighter in colour than those of *E. cinerea*. It is, of course, possible that the colour of the pollen, like the quality of the nectar, is affected by soil and climate, which would introduce another cause of differences of opinion.

It is an interesting fact, and perhaps not generally known, that the ling, in spite of being so much visited by bees, is partly wind-pollinated (Willis and Burkill, "Annals of Botany," 1895). The pistil projects beyond the calyx, and the pollen, as is well-known, is easily shaken out of the flowers in clouds and blown about by the wind.

While on the subject of heather pollen, is Mr. Hayes quite certain that he is correct in describing the four pollen-grains of the tetrad as *enclosed in the mother-cell*, when they leave the anther? ("B.B.J.," Vol. 39, page 304). I was under the impression that the wall of the mother-cell disappeared as such in the course of development of the pollen, and was transformed into the oily substances found on the surface of the pollen-grains (which in this case adhere together) (see Dr. M. Küstenmacher on propolis, *Berichte d. deutschen Pharmazeutischen Jesellschaft*, 1911, page 68); but am quite open to instruction.

It appears that the colour of pollen is also greatly affected by the state of the weather. I have noticed that loads of chestnut pollen (*Castanea vulgaris*) are nearly lemon-yellow on dry days, but distinctly green shortly after rain. A writer in the *Bienen-Zeitung* of 1891, page 171, points out that the colour of pollen varies with its age, and also with the weather. He describes the pollen of the opium poppy (*Papaver somniferum*) as green when young, becoming whitish when older. He also states that pollen secretes more oil on its surface on good nectar-days; and suggests that the bees use this oil to stick the pollen together when collecting it. That they do this consciously is doubtful, especially in the light of Mr. Sladen's observations on how the corbicula is filled, but the more oily pollen would certainly stick together better; and this may partly account for the enormous loads carried home on fine days, and the very small ones seen in bad weather (though these last are probably also due to the scarcity of pollen on such days).

Some of the differences of opinion as to the colour of pollen have arisen from the circumstance that a load of pollen, if kept, will often, as Mr. Macdonald points out, change colour. On one occasion I took from a bee a load of bright red pollen (probably from a *pelargonium*, though I could not trace it). It was kept in a drop of water on a glass slip, covered with a cover-glass, and next day was no longer red, but yellow. The substance producing the red colour had either evaporated or undergone some chemical change. (The drop of water had naturally dried-up in the course of twenty-four hours).

There remain, however, some puzzling instances which cannot be explained on any of these grounds (unless the differences of soil and climate be held responsible). One is Mr. Hayes's description of the load of white clover pollen (*Trifolium repens*, "B.B.J." 1910, page 485), as "dark dull green" in colour, whereas it has always appeared to me to be of a dark golden brown. I may add that all my notes on the colour of pollen were made with water-colours from the actual loads, shortly after they were taken from the bees.—ANNIE D. BETTS.

"THE INSPECTOR TO SEE YOU."

[8648] Yes, the inspector is on the war-path, and the above, or similar, term of introduction has greeted me several times recently. But my inquisitive visitors were not all bee inspectors, nor did their business relate to bee diseases.

Let us see what a terrible ogre the inspector is going to be, and if he will act up to the tune of the expectations of those who have so much dreaded the *bee*-inspector.

I was busy in my workshop when a smart gentleman with his face wreathed in smiles was ushered in. A few commonplace remarks were passed, and my new acquaintance not appearing to come to the point, the query, "Are you interested in bees?" brought out the dark and sinister intentions of his visit.

"I was asked by the Excise Authorities to call on you and get what information I could as to the manufacture of mead. I don't know how they got your name, nor why they want to know this."

This was something like an apology, but perhaps he was not so innocent as he seemed, for I could have told him "why" —but didn't.

I assured this gentleman with the perpetual smile and ever-ready laugh, that mead was very seldom made in these days, more especially as the combs were relieved of their contents without being smashed as of old, when the residue was often "washed," and this thinner substance was frequently set for making mead. Occasionally, the cottager with his straw-skeps might do something of the same kind, but, really, as an article produced for sale it was almost unknown.

His superior officers may have been convinced in their own minds that modern bee-keepers, lately so much in the public eye, through agitation for legislation, were guilty of the wholesale production of mead; and I fancy the little knowledge of the industry that had filtered into the Excise Department will not prove a dangerous light for future guidance. Nevertheless, bee-keepers may rest assured

that if they clamour for legislation, the law will be inclined to exact compensations.

My smiling friend was quite pleased with himself in showing off the little knowledge that he had gleaned about bees, every incident as it was narrated being punctuated by his hearty laugh. But his own hobby was a little greenhouse made by his own hands, the work having to be done among the pots and pans in his wife's kitchen, with the onerous duty of being compelled to clear up every little chip after each of his laborious spells at the work. But now he and his wife share the joys that his labour created, and the domestic jars are forgotten amid the radiant beauty and perfumes of the fairies in the greenhouse.

Another inspector that called was not in any sense talkative; he had no smile, and I had much difficulty in attempting to "draw" him. But, believe me, he was not dangerous; he came anticipating little, and left suspecting less.

He was a cattle inspector, who was travelling round all the recently infected areas—a sort of beater-up, as it were, just to see if there was any more slaughter waiting for the law to carry out. His was a simple question, after introducing himself: "I have just called to ask if your cattle appear to be all right."

"Yes, there is nothing the matter with them; would you like to see them?"

"Oh, no, that doesn't matter, if you say they are all healthy."

That struck me as a little strange. Here was a certified veterinary surgeon, appointed by the Board of Agriculture to call at every farm within a restricted area, and supposed, I presume, to inspect every single animal; and that was his reply.

Nevertheless, after having his assurance he had not been on affected premises, I showed him round; but he had a respectful regard for the cows, and for one in particular, and gave only a casual glance at them. He had done his duty by calling and putting the question!

Will the bee-inspector be as easily satisfied, and so little to be dreaded? Remember it is this same department which is to carry out the Bee Diseases Act.

"How do you consider foot-and-mouth disease originates?" queried I.

"I am sure I cannot say any more than you can," he replied. And he a qualified veterinary surgeon! An Inspector appointed by the Government!

"But," I suggested, "does not the complaint start internally and show itself in other ways, and are you aware that any animal may show symptoms of the complaint without the final evidence of tender mouth and feet?"

He was not aware of it, but considered that sometimes a cow might show it in the udder as well as in the foot and mouth.

Nevertheless, I am of opinion that this disease does develop in the first instance internally, throwing out a rash in the skin, and some time before the feet and mouth are affected.

But if the writer was an Inspector he would not rest satisfied as this veterinary did, but would certainly insist upon a very close inspection of every animal, every hive of bees where necessary, or any suspected thing whatever, as the case might be.

One other instance. A man of rotund appearance and jovial features came in one day and dropped his bulky form upon a handy section-box with a sigh of relief as he mopped his perspiring brow. Of course, the crate was full and solid.

We pleasantly passed the time o' day, and then it came out that he was the Inspector of roads and bye-ways.

"Oh, yes, we have been very busy, but you shall have the hedge set up at once, and in the autumn the entire fence shall be cleared and re-made."

"Very well, that will be all right," said he, and then among other things, he went on to explain the difference between the low cost of road-making in Wales, where he had been employed, as compared with the great expense in this part of Sussex, where the stone is not found locally.

His improvised seat appeared to suit him, for he wandered into the field of general topics, and seemed in little hurry to move on. He was a man apparently well pleased with himself and the world in general, and presently left, again thanking me for promising to do that which it is usually understood the local authorities insist upon being done.

Will any reader in the future look forward to the visits of the bee-inspector with dread? Perhaps he will if he knows his apiary will not bear inspection. Even then, he will not find the inspector anything but a pleasant person to deal with if he meets him in the right spirit. The bee-keeper will not find him an enemy, but a helpful friend as far as it is in his power to be so without neglecting his own very apparent duty.—Saml. Simmins.

MATING QUEENS.

[8649] Some years ago a swarm emerged one Sunday forenoon from one of my hives when there was no one in the house and was lost. As I had lost 12s. worth of bees, I tried to make it up by getting £12 worth of wisdom. I clipped one wing of all my queens.

I often keep the pieces cut off. I find they are from under ⅛in., or 2 mm.,

to over 3-16th-in., or 5mm. A queen with one wing shortened by about ⅛in. can fly in circles of about 8 or 10ft. I had a swarm, my second, last year; it settled about 15ft. from the hive.

I suggest that virgins should be slightly docked where we want to control mating; 1-16th-in. or even less from wing might be quite sufficient to prevent her wandering at her own sweet will.

I hope to try this in a few months; but I am a very short-sighted man, and most bee-keepers would be more successful than I could be in fixing the best length of wing to be taken away.

Hoping for a good bee-year to make up for 1912.—JOHN W. MOIR.

WANTED—A BEE-KEEPER.

[8650] I have about three acres of orchard and am surrounded by orchards, gardens, and fields. I shall be much obliged if you can put me in touch with any bee-keeper who would care to establish hives in my ground. There would be no charges of any sort; I only wish to ensure the better fertilisation of the fruit.—J.H.C., Surrey.

[Anyone wishing to take advantage of the above offer should address, J. H. C., c/o the Editors, BEE JOURNAL Office, and we will forward their letter to our correspondent with pleasure.—EDS.]

INFECTIOUS PARALYSIS.

[8651] Your correspondent, Mr. C. Heap, page 28, is mistaken in his idea that I attempted to rescue Mr. Simmins in my letter, page 484 (of "B.B.J.," December 5th). In my opinion the latter needs no champion, as his able article in last week's journal shows. I trust that Mr. Heap has at last gained a definite and satisfactory answer.

My only object, as my letter demonstrates, was to identify myself with Mr. Simmins in the principles of prevention and recuperation as advocated by him, as opposed to the wholesale destruction which invariably accompanies the operations of the Board of Agriculture.

With regard to the report which Mr. Heap is so very anxious I should study, he may, I think, rest assured that neither myself or any other of "the old guard," is likely to rush into print "without his book," but I am prepared to hazard the opinion that anyone of ordinary intelligence may gain more experience of infectious paralysis by a month's study in an affected apiary than in a lifetime study of the report in question, just as one may gain more knowledge in a month's experience in a large apiary than by any amount of study of the most approved bee-books.

The only useful point in the report, to my mind, is the recommendation that the raising of an immune strain of bees be attempted. As to its scientific side, even if that is all sound gospel, and not largely theory, it leaves us not one step "forrader."—F. WOOLDRIDGE.

A JAPANESE APIARY.

A *Bee Journal* reader of several years standing, Mr. Kinjiro Ohushima, has sent us the charming picture of his apparently flourishing apiary, illustrated on opposite page. The photograph was taken in June, 1912, the apiary in question being situated at Nagoya, Japan. We hope some day he will tell us something about the bees in that part of the world; we note the modern hives, which have apparently been adopted by the progressive Japanese in preference to the small ones first used by them.

CAPPINGS OF COMB.

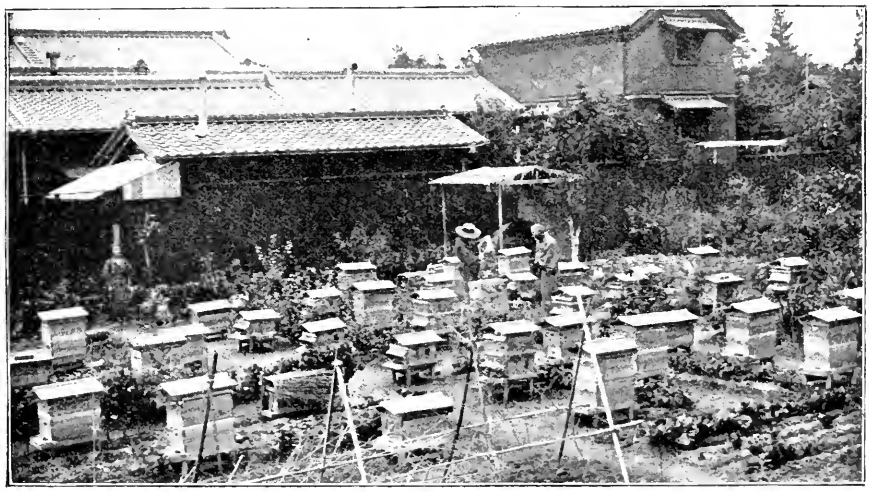
BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

The Compound Eye (p. 512).—Whilst agreeing in the main with "G.M.," I do not quite follow him in his perhaps rather sweeping statement that the Lecuwenhœk experiment, and that other with the cones in position, prove nothing. Perhaps he would give the reasoning which is behind the statement. These experiments would seem to be essential to the determining of a portion of the problem. If, for instance, the lenses give more than one picture of an object, whilst in their natural position, *i.e.*, without being forced out of their planes, one may assume that these images blend and are received as a single picture. The very complexity of the structure behind the compound eye suggests that here the image is not simply transmitted, but merged, and experiment with the cones in position appears to establish that such images exist. It is clear, at any rate, that the two compound eyes themselves must admit some common portion of the field, and it is inconceivable that this is seen as more than one picture. Judging from observation, there is no ground for supposing the sight of the bee within its range to be inferior to our own, and, as "G.M." points out, stereoscopic sight is greatly superior to mosaic vision. From this point of view alone, we may reasonably suppose that the bee possesses this better vision. The fact that the bee, like other insects with similar organs, flies at seasons when the actinic power of the light is decidedly low tends to this conclusion. Even supposing that at some remote period the pictures were received separately, as suggested by Mr. Hampton, we might expect that by process of evolution the better eye would be evolved.

Vigorous Stock (p. 3).—"D. M. M." raises an important point, insisting upon the natural vigour of a stock. I am a firm believer in this as the basis upon which to found a strain, and in such selection as I have done, I have considered wintering quality the first essential. My experiments have not led to any epoch-making conclusion, but such improvements as I have dared to attribute to my selection, have seemed to confirm the practice as sound. I believe that only those stocks which have come well through the winter should be used for breeding, however tempted one may be by stocks which build up rapidly, and even surpass them at times in yield. It may be that such stock is better able to stand up to bad times, inferior food, and disease.

So-called Cures (p. 3).—I hope that this suggestion of Mr. Macdonald's will not be allowed to drop unnoticed. A small committee, or even one individual whose standing was above criticism, might well investigate the question of cures by careful experiment upon undoubtedly diseased stocks. Proprietary remedies might be tried, and the history of the experiments published. I have no doubt that vendors would be quite willing to supply remedies free for such a purpose.

Hands Across the Sea (p. 3).—Most people will recognise Mr. Morley Pettit's right to speak authoritatively upon apicultural matters. I do not, however, know whether he has any experience of the bee-keeping cottager of this country, and I think he confuses Mr. Bartlett's eulogy of the skep-hive with his own experience of the box-hive of the Canadian farmer. I doubt if there is true comparison possible, but I submit that a well-made and well-kept straw-skep is altogether superior as a sanitary dwelling to any box-hive worked on similar lines. Bees undoubtedly prosper in the skep, and when properly protected it is well suited to the outdoor wintering practice of this country. It is, moreover, suited to the intelligence and pocket of many a cottager whose personal disqualification or conservative ideas would otherwise operate against their profit. Cottagers have undoubtedly made successes with the more scientific frame-hive, but it is also true that many of them have gone out of the business after having made the change. Possibly a skep of the Gravenhorst type might be better, but it is more than likely that, in common with many so-called frame-hives of my acquaintance, it would be regarded as a sacred or sealed book, only to be read by a priest of the esoteric craft.



A MODERN JAPANESE APIARY.

The First Frame (p. 8).—I do not possess a copy of Rusden's book, but I venture to suggest that Mr. Smallwood's reading of this extract is mistaken, and that the frame to which he refers so enthusiastically was not such a frame as we use, and with which he compares it, but merely a kind of removable ceiling from which the naturally built combs depended. Perhaps he will refer to the book itself to settle the point.

W. B. CARR MEMORIAL FUND.

	£	s.	d.
Amount already acknowledged ...	11	8	0
R. H. Attenborough	1	1	0
A. D. Betts	0	2	6
	£12	11	6

TOTAL HONEY IMPORTS FOR 1912.

January	£1,882
February	1,934
March	1,251
April	5,425
May	7,494
June	4,061
July	4,698
August	3,796
September	778
October	1,970
November	1,745
December	1,063
	£36,097

It is interesting to note that though 1912 was not generally a good honey season in this country, the imports of honey decreased by £6,234 from the quantity imported in 1911.

Queries and Replies.

[8578] *Stocking an Observatory Hive.*—Will you kindly tell me through the "B.B.J." the best way to introduce bees into a three-frame observatory hive? I have made one after Lee and Son's pattern shown in the "British Bee-keepers' Guide Book." I have at present four good stocks in W.B.C. hives, which I have made myself, also two new hives made during the winter evenings. (2) Can you tell me of the nearest B.B.K.A., as I know of none near here, and would like to become a member.—W. C. P., Wisbech.

Reply.—(1) The best plan will be to make a small nucleus from one of your stocks, placing it in the position the observatory hive is to occupy. Introduce a queen, and after she is accepted transfer the frames from the nucleus hive into the observatory. (2) The nearest Association Secretary is Mr. E. Brown, Orchard Road, Melbourne, Cambs.

[8579] *Making a Claustral Hive.*—Two years ago, I was attracted to bee-keeping by reading Cowan's "Guide Book," and the interest aroused set me making preparation to start in the spring. I therefore had three W.B.C. hives made, and in June last purchased two stocks of bees. One of them swarmed in a few days. The bees thrived so well that I thought it prudent to have a fourth hive made ready for driven bees in the autumn, which was accordingly stocked in this way. The county expert examined them when he made his autumn visit, and told me this lot had plenty of stores for winter, while two of the other hives required six pints of syrup before closing down. I am writing now to ask about the "Claustral Hive." I am making a "Twin" or double hive, with perforated zinc ventilators at sides of porch, the light being excluded by a thin ¼in. board, half-an-inch from the porch sides; this allows the air to pass over top and under bottoms in a lateral direction. Can you let me know if I have made any mistake in not having the chimneys as shown in "Guide Book"? Should chimneys be absolutely necessary; would one (1½ in. diameter) in each be sufficient ventilation instead of two, as shown in illustration. I trust you will understand my query, as after taking so much trouble I would be glad to feel secure before placing the hive on my allotment ready for June swarms. I am somewhat puzzled about the Claustral Slide—nothing being shown—and as exclusion of light seems the great factor, would you kindly suggest any simple arrangement?—C. J. C., Leamington.

Reply.—The plan you propose would not work at all satisfactorily, as it would not make the "Claustral" chamber absolutely dark, nor would the ventilation be efficient. Many plans have been tried, and it has been found that the only effective one is to have chimneys. The diameter of the chimneys should be 1in., and the length 2½ft. The reason for this diameter being so small is that, the smaller the diameter the more efficiently is the light excluded. The area of the opening of a 1¼in. tube is more than double that of a 1in., so that the larger the area the less light is obstructed. The object of having two chimneys placed in the position shown in "Guide" Book is to distribute the ventilation more evenly without causing a draught. The area of each opening in the smaller tubes is .785, making 1.570 for the two, while that of the larger tube would be 1.767, therefore you would have too much draught in one direction, and the ventilation would not be so well distributed as with the two smaller tubes, which provide all that is necessary. You can have conduits of perforated metal in the hive so long as the ventilation is provided by the chimneys. You must be particular about making the alighting board fit so as to make the porch perfectly dark when closed.

You will find more details which may be of use to you in the "B.B.J." for Feb. 23rd, 1905, page 71, where the Claustral Slides are illustrated and explained, and also in "B.B.J." for March 30th, 1905, page 121.

[8580] *Best Hive and Strain of Bees.*—I shall be grateful if you will advise me, through the journal, on the following points: I have just returned to England after a residence in New Zealand, where Langstroth pattern hives and Hoffmann

frames (self-spacing) are practically in universal use, so that I really do not know what pattern to adopt here. Will you, therefore, kindly tell me: (1) The *best* type of hive to go in for, and the name of the *best* maker; price is no object for a good article)? (2) Are Italians, Hybrids, or Blacks the best for this climate? (3) Name of a good supplier of stocks of bees? (4) Are Root hives and appliances procurable in London, and where?—"J. Y."

REPLY.—(1) The "W.B.C." hive; for maker we refer you to our advertisement columns. (2) Blacks are best for this country. (3) We refer you again to our advertisement columns. (4) No.

[8581] *Bee-stings.*—I should be obliged if you would answer the following question in your next issue: What is the best and quickest remedy for a sting in the mouth or throat, or any part likely to cause suffocation through swelling of air passages? Some recommend hot water, as it causes better circulation and the spread of the poison over the whole system.—ENQUIRER, Mansfield.

REPLY.—The person stung should be given a strong dose of sal volatile, also a purgative. The actual part stung should be fomented with very hot water to which a little vinegar has been added.

[8582] *Paint for Hives.*—I am a constant reader of the BRITISH BEE JOURNAL and find no end of useful and instructive information in its pages: amongst other things I have learnt how to make "putty and knotting," and should be greatly obliged to you if you can tell me how to mix "white paint" for painting my hives. —LANGTONION.

REPLY.—White paint should be made with pure white lead for outside work, no turpentine being used, half raw linseed oil and half boiled oil is the best. Put the white lead into a tin, adding for each pound about a dessertspoonful of dryers or terebine. Add a little raw oil and mix well into a paste, then put in the remainder of the two oils until you get the desired consistency. By mixing with oil the paint will not be so white as when mixed with turpentine, but it will wear much better. To make it a better colour add a few pinches of blue powder.

[8583] *Variations in Foundation.*—I shall be obliged if you will answer the following questions in the "B.B.J.": (1) What is your opinion of the enclosed samples of foundation? A sags and breaks down, and is drawn out in uneven patches with extended cells. Why is this? It is sold as medium brood, eight sheets to 1lb. B Also sold as medium brood. Bees draw this foundation out into good even combs in less time than they would take to draw out same quantity of sample A. A and B are both sold as "Weed" foundation yet they are not alike. Wherein does the difference lie? The third sample is of rather a light colour; and sold as "Weed" foundation, thin super, what is the difference between C and D? 2. Of what variety are the enclosed bees? 3. I have vol. xl. of "B.B.J." complete, with cover. What will it cost to have same bound?—J. L. T., Cheltenham.

REPLY.—(1) A is a sample of foreign-made foundation and has not been made by the "weed" process, it consists of wax of inferior quality. B is a better foundation, but we doubt if it has been made by the "weed" process. C is a good foundation, made from selected light wax. D Made from ordinary commercial wax without selection. C Should be warmed before use. (2) Ordinary British. (3) Two shillings.

[8584] *Solar Wax Extractor.*—I thank you for your valuable information on "Making Observatory Hive," page 470, "B.B.J.," November 21st, 1912, issue, and if I am not trespassing on your generosity would you kindly give me a few hints as to the making of a solar wax-extractor: —(1) At what angle should the glass be? (2) Best distance apart for the two glasses? (3) Most suitable distance of comb-tray from glass? Of course, these are not parallel. You might give the central distance. (4) Would glass 1ft. 8in. by 3ft. 4in. be a suitable size (I have some glass this size), if not, kindly state a better? Again thanking you in anticipation of reply through the columns of the most interesting and helpful "B.B.J."—R. H. (Lines.).

REPLY.—(1) The slope should be from 1ft. at the top to 3½in. at the bottom. (2) ¾in. (3) 5in. (4) Yes, that would be suitable, but a better size is length 2ft. 6in. by 18in. wide. You could easily get the glass cut down to these measurements.

PETRIFIED HONEY.

An account recently appeared in the *Standard* of petrified honey being found, a reprint of the extract being given below in case it may be of interest to readers not having already seen it:—

"A curious discovery is reported to have been made by an American prospector and mining expert named Terry, in the course of an expedition some ninety miles to the south of Chihuahua, in Mexico. In a secluded glen, edged by trees and tropical foliage, to which he was lead by a Mexican Indian, Terry came upon what he describes as petrified honey. He says:—

"'My guide left the beaten track, and

broke off into a ravine, deep from the main road. He climbed up some ledges near where stood many of what were once trees, but are now petrified, and stand there splendid monuments in stone.

"'The adjacent rocks appeared to be of limestone formation, and many of them had a top-dressing in places of some dirty white-looking substance. Borrowing my knife, the Indian chopping off a piece, handed it to me, and told me to taste it. Wiping off what was a yellowish top-dressing, I saw that what remained of the sparkling stuff was white, and glistened in the sun. I put a piece of it in my mouth, and tasted about the sweetest thing that ever crossed my palate. It was honey, petrified honey! How did it get there? The only way I can imagine is that the bees in some prehistoric era collected the honey, then, of course, in the liquid state, and deposited it in the crevices in the rocks, or possibly there were trees, which afterwards turned into stone. Then, too, it may have been some gas in the crevices which brought about the petrification. The process of turning wood into stone is a very slow one, as everybody knows; while I am no scientist, I should think that thousands of years were required to make what you might call natural candy. There is not enough of the petrified honey to utilise it as a commodity, or luxury, and the Indian and I are the only persons who know of its whereabouts.

"'I am relating this simply as a contribution to science, and so that the world may know something new.'"

CINEMATOGRAPH AND BEE-KEEPING.

At the London Opera House on Monday last the management made a first development towards using the cinematograph as an educational factor by including in their programme this week a film showing the "Life of the Honey Bee." The pictures were described by Mr. J. C. Bee-Mason, who thus has the distinction of being the first bee-expert to appear on the music hall stage. The new innovation was well received by the large audience, and Mr. Bee-Mason must have been gratified by the hearty appreciation with which his little "bee-chat" was received. Now that a start has been made there is no knowing to what an extent this attractive means of interesting the general public in bees and honey may go.

Notices to Correspondents.

L. C. F. (Hants).—*Dysenteric Bees.*—We fear that the bees have been attacked by "Isle of Wight" disease, and the safest plan would be to destroy them at once. If you would rather not follow this advice, try the plan you propose. It is better than doing nothing.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ¼*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

QUANTITY of good Extracted Honey for sale; also about one gross of Sections, partially granulated.—J. HOWLAND, Brampton, Huntingdon. v 61

PURE SOMERSET HONEY, granulated, one gross, in 1lb. screw cap jars, 8s. 6d. dozen; cash on deposit.—F. HARRIS, Shepton, Beauchamp, Seavington, S.O. v 60

PREPARATORY SCHOOL for Girls and Little Boys for disposal, successfully conducted during past ten years, Tunbridge Wells, good bee district, excellent reasons for selling.—KNOWLEDGE, "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 54

WANTED, Sweetmaker's Thermometer, cheap. —MISS BEACH THOMAS, Millbrook, Clarbeston-road, Pembrokeshire. v 52

GRANULATED HONEY, good quality, 56s. per cwt., f.o.r.—J. PRATLEY, Burford, Oxon. v 58

OFFERS WANTED for nineteen 1lb. screw cap jars of Granulated Honey; also 14lb., and 2lb. of Beeswax.—BRAY, Covenham, Louth, Lincs. v 53

3 CWT. fine light Honey, 28lb. tins, 56s. per cwt., 4 on rails; tins returnable.—CHAS. F. COOPER, Ashen Hall, Clare, Suffolk. v 57

HONEY, light, superior, 28lb. tins, 15s.; sample, 2d., cash with order.—BROOKS, Ashingdon Apiary, Rochford, Essex. v 56

1 CWT. excellent quality Honey, medium colour, 56s. cwt., f.o.r.; sample, 2d.—SIMCOX, 17, Victoria-road, Fallings Park, Wolverhampton. v 50

GUARANTEED clean, healthy, shallow Combs, 4s. 3d. to 5s. 6d. dozen; polished Observatory Hive, 6s. 6d.—ANDREWS, Rock-road, Millfield, Peterborough. v 49

PURE HAMPSHIRE HONEY, 58s. per cwt.; 1lb. screw cap bottles, 8s. 6d. dozen.—L. G. FORD, Burwood, Clatford, Andover. v 51

PURE CAMBRIDGESHIRE HONEY, diploma Grocer's Exhibition, 60s. per cwt., f.o.r.; 28lb., 17s. 6d.; samples, 3d.; light Beeswax, 8d. lb.; dark, 6d.—APIARY Fordham Abbey, Cambs. v 59

MICROSCOPE for sale, mechanical stage, 2in., ¼in., and 1-5in. objectives, two eyepieces, stand condenser, forceps in case, 90s.—MAGDALEN APIARY, 31, Ellerton-road, Wandsworth Common, S.W. v 55

4 CWT. good medium Honey, 56s. per cwt.; 3 gross 1lb. bottles excellent light Clover Honey, 9s. dozen; medium, 8s. 6d., f.o.r.; sample, 3d.—F. W. FRUSHER, Crowland, Peterboro'.

Editorial, Notices, &c.

REVIEWS.

The Fungi of the Bee-hive, by Annie D. Betts, B.Sc. This is a reprint of a paper which has appeared in the *Journal of Economic Biology*, December, 1912, Vol. VII., No. 4, pp. 129-162.—The author is already known to bee-keepers in connection with her work on fungi, and we alluded to her discovery of a new genus and species (*Pericystis alvei*), on page 401 of "B.B.J." for October 10th, 1912. It is well known that a number of fungi find their habitat in the hive, it is therefore with reason that she says from the point of view of the bee-keeper it is very desirable that our knowledge of the organisms found in the hive should be as thorough as possible in order to facilitate the study and suppression of diseases of the honey-bee. Bee-hive fungi have never been thoroughly worked out, though various species have from time to time been recorded as present in hives. After giving a history of all the fungi hitherto described as present in bee-hives, followed by a description of her methods of investigation, Miss Betts discusses the relation of the fungi to their habitat. A general description of the conditions prevailing in the hive, and of the distribution of fungus growth in it are given. Fungi are found growing on various substrata in the hive, but little is known as to the sources from which the various fungi are brought into the hive. Some are carried from hive to hive by the bees themselves, as Miss Betts was able to prove by an experiment made on a swarm. Not all fungi brought into a hive are able to establish themselves, and it is satisfactory to learn that none of the twelve species discussed appear to be pathogenic. The presence of mould in a stock is, however, if not a cause at any rate a sign of unhealthy conditions.

Of the twelve species, *Pericystis alvei* and *Oospora favorum* are probably confined to the hive; the first occurring only on the pollen stored in the combs, and the second on old brood-combs. *Penicillium crustaceum* and *Aspergillus glaucus* are ubiquitous species common in bee-hives, but are not usually found in great quantity until after the death of the stock. *Mucor erectus* is found on dead bees. In addition to describing the different species, their structure and development is illustrated by twenty-eight figures which facilitate their study. Miss Betts says the list does not pretend to be an exhaustive one, and there are other species known to occur in the hive, but have not been worked out for inclusion in the present paper. We hope the author will continue her investigations, and congratulate her on having so far worked out the subject so thoroughly, and contributed so much to a study that has had but little attention up to the present.

Atlas estestvennoy istoreea ptschelar, by B. G. Loukin (published by M. A. Dernoff, Editor *Ptscheloradnaya Shisn*, Viatka, price 3 roubles (7s.).—This consists of twelve sheets of diagrams 33in. by 24in. each illustrating the natural history of the honey bee. They are intended to be used in giving instruction, and are the first of the sort published in Russia. Bee-keeping has made such rapid development, and the number of instructors has so greatly increased, that a need for such diagrams has been felt for some time. This want has now been supplied by M. Dernoff publishing the drawings of M. Loukin. The different figures are large enough to be seen from a distance, and will be most useful where it is not convenient to use a lantern. Hung on the walls in schools, museums, or libraries, they will serve to make one familiar with the structure and internal anatomy of the bee. The following are the contents of the different sheets: (1) Queen, drone, and worker. The queen is 15in. long, and this will give some idea of the size of the illustrations. (2) Hind leg of worker. (3) Fore and middle leg of worker. (4) Abdomen, ventral plates and wax-scales. (5) Wings and gland structures. (6) Head of queen, worker, and drone, with details of eyes and tongue. (7) Sections of bee, digestive apparatus, coloured yellow, and nervous system blue. (8) Reproductive organs. (9) Heart and sting. (10) Section of abdomen of queen coloured. (11) Section of larva and part of comb showing stages of development of bee from egg to perfect insect. (12) Comb showing different forms of cells and development of brood. It will be seen that the whole of the anatomy has been represented, and the illustrations have been well drawn, although unavoidably a few mistakes do occur, but these can be corrected before any further prints are made. The descriptions are in the Russian language, but anyone who has "The Honey Bee" can, from that book, easily make out the meaning of the references.

Fruit Farming, Practical and Scientific, 1912, by Cecil H. Hooper, M.R.A.C., F.S.I. (published by *The Lockwood Press*) can be had from the *British Bee Journal*, price 3s. 6d., postage 2½d.—The author is one of the best known authorities on his subject, not only has he been a fruit grower on an extensive scale himself, but living as he does in the "Garden of England," has ample opportunities of seeing the various methods adopted in fruit-growing and their results, from which he has undoubtedly culled all that is best.

It has been our pleasure to know the author personally for the past fifteen years, and a more painstaking and indefatigable worker, both in science and practice it would be hard to find.

Not only is Mr. Hooper a practical fruit farmer, but he is also interested in, and has kept, bees. The chapter on "The Setting of Fruit and the Relation of the Hive Bee Thereto," alone is well worth the price charged for the book, and clearly illustrates the care and method of the author in obtaining statistics.

The book consists of thirty-four chapters with 130 pages, and is admirably illustrated. The majority of bee-keepers are interested in fruit-growing, therefore this is a work which should be in the hands of all. Every phase of the subject is dealt with, including "The Training of the Fruit Farmer," "Capital Required," "How to Set out a Fruit Farm," "Picking," "Packing, and Preserving Fruit," "Cost of Cultivation,"—every variety of fruit being dealt with in a simple and clear manner, so that the veriest novice can understand.

We heartily commend the book to our readers, and prophesy for it a large sale.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

THE CARE OF APPLIANCES.

(*Continued from page* 13.)

The Bee Shed.—This should be thoroughly overhauled, if at all shaky so that the wet gets in it should be made quite sound, though if properly constructed at first, it will not require attention afterwards. One of the best roofs is made by first boarding with 1in. boards, covering this with tarred felt, and over all corrugated iron. Constructed in this manner, the roof will resist heat, cold, and wet. If made of wood only it is likely to shake and let in the wet, even covering with felt does not get over the difficulty, for, as a rule, retarring is neglected, and then, instead of resisting the rain, it helps to hold it as it runs through the holes caused by the felt perishing in places and remains imprisoned, thus causing the wood to decay. If the roof is made of corrugated iron alone (as is attempted by some) it makes the shed too hot in summer and too cold in winter, apart from the difficulty of making it bee-proof. The corrugated iron should be painted either with the special red mixture sold for the purpose, or with black varnish; failing either of these, tar may be used.

Joints that have "given," and will let a bee through (or more especially a wasp), should be stopped by nailing strips of wood over them, or if they are very numerous it is best to cover the inside of the walls by pasting several thicknesses of brown paper over the cracks. Door and windows should receive attention, so that bees or wasps cannot penetrate. A badly-constructed bee-shed is a source of great danger in inciting the bees to rob through their being able to get inside and work on the wet combs after extracting, or on sections that are stored away. It is a great comfort in the hot weather to have the window-sash removable, and a temporary one with perforated zinc instead of the glass is useful to put in its place; this gives air, keeps the place cooler, and excludes the bees. Now is the time to fix extra shelves and cupboards, so that advantage can be taken of all the available space. Also a thorough washing down and disinfection should be done. It may be that the bee-shed is good in every respect except the thickness of the walls; these ought not to be less than 1in. full. Thin walls can be improved, but at the sacrifice of appearances. Coat the outside with tar, let this set, then coat again in sections, sticking brown paper on to the tar: when set, coat again, let it dry, then apply a second lot of paper. Three coats of good hot, boiling tar completes the work, the paper coating will give greater resistance to climatic conditions than the thin wood, and we shall have a stout bee-house in which many happy hours can be spent during the long winter evenings, making and repairing the appliances ready for the coming season.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE SPIRACLES OF THE HONEY-BEE.

[8652] Since the publication of my letter [8633], "B.B.J.," January 9th, I have become aware that Prof. Lander in his treatise, *Der Bau der Biene*, *Stuttgart*, 1912, confirms the existence of the second or middle pair of spiracles in the apparent thorax of the honey-bee, and points out their position in a sketch. He writes, page 101: "The next spiracle is quite tiny, and is obviously of secondary importance. It can be made out by sections only as a small slit immediately in front of and below the hind wing." I do not think that any enquirer need be deterred by this from searching for the spiracle by

ordinary microscopical investigation. Mr. Snodgrass does not mention the necessity of sections, and I should have great hopes of success if it were possible to spread out the membrane fairly flat under a $\frac{2}{3}$in. or $\frac{1}{2}$in., if not under a 1in. objective.
H. J. O. WALKER (Lieut.-Col.).

"BLURTS FROM A SCRATCHY PEN."

[8653] "Why do people keep bees?" or to word it differently and more expressively: By what remarkable inclination of the powers of reasoning is it, that men are induced to provide homes for, care for, and study the habits of an insect, which, in return for all this attention, at the slightest provocation, and sometimes even without it, turns round on one, metaphorically and actually, to inflict a vicious sting. We are full of contradictions, and this would seem to be one of the most peculiar. Some such train of thought must have been in the mind of "A Lanarkshire Bee-keeper" (Thomson), who propounded this enigma in the sixth number of the first volume of "B.B.J.," and as I purpose to borrow some of his arguments, let me at once give him the credit for it.

"Some for pleasure, some for profit, some to study their natural history, others for experiment, and many for the sake of the moral lessons they inculcate." This is the way in which he answers his own question. Those who keep them for pleasure he considers must be of a kindly disposition, and though professedly keeping them for pleasure are really the most successful, because they carefully attend to their every want, and protect them against all evils.

Yes. But beyond this actual attention, which is only the absolute duty of those who have the care of anything that lives, there is another still more powerful motive. The love of their work. Take this away from any calling and life is but a weary grind. A painter, a poet, a writer. Tie their conceptions to bring forth only what will sell, make their genius, their ideas subservient to the necessity of keeping their domestic pot a-boiling and interest is for a great part gone, for their abilities are debased to the level of what the fashion of the day may be running mad about. But if they are strong enough to emancipate themselves from this slavery they acquire renown. Apply this to bee-keeping. Work for the higher motive, for the love of the science. Within reason let not the question of cost affect you, especially as to time and trouble. It may seem a negative of all economical principles, but you will find success in that very daring, and what I have to further quote from the "Lanarkshire Bee-keeper" is to this point.

"To those who only keep bees with a view to profit, that is, who only keep them for what they will fetch," he administers a most severe castigation. "Sordid, grasping, they rob them of every ounce of honey and grumble that they cannot get any more. For every pound laid out they expect two in return every year, without giving themselves trouble or paying attention to the bees." Nor is this one iota exaggerated. We have them at the present day, although this was written forty years ago. I have heard a well-known lecturer remark in referring to the duties of an expert that there are some who consider it the duty of the expert to provide the bees, fit up the hive, put on the supers, take them off, sell the honey, and put the money into their bank. I have in my mental note book many such. I know them well; every expert knows them well. One visits their apiaries, everything is in disorder, nothing to hand, leaking roofs, hives slanting to every angle, floor-boards cracked; ants and earwigs creeping through. Lift off the roofs, taking care that they do not break to pieces in your hands. Faugh! it sickens you. Every conceivable old garment, male and female, foul as when cast off by the wearer, crammed into the body-box. Is it any wonder that disease revels in such slums as these. Where there is filth, there disease is to be looked for. And what is all this rubbish accumulated to save. Just the cost of a new unbleached calico frame cover and, say, 18in. of stair-carpet, an outlay of possibly ninepence, or even less. Nay, it need not even cost this. Failing carpet or similar woollen covering, a calico cover and old newspapers or brown paper, folded to fit the top of the brood-chamber, make a most efficient, warm, and healthy covering. These, if they become dirty, or damp, can be easily destroyed; nor do they harbour moths or vermin. One of the virtues which an expert is supposed to possess, or at any rate to assume to have, is an unfailing good temper, but personally I fear that mine vanishes when asked to discover bees under a heap of rags which even a marine store dealer would look at with suspicion. Every one knows the proverb, "Cleanliness is next to godliness." It is quoted, and has been quoted for all purposes, "*usque ad nauseam*," but it will bear using again in connection with this subject. Cleanliness is one of the *very most important* necessities of bee-keeping. You cannot overdo it. Keep your hives, your coverings, your outfit scrupulously clean. Twice each year clean and scrape the floor-boards, scrap all dirty combs. When you have finished for the season with your section racks, your feeders, your bee-escapes, dividers, and all such sundries, pass them through a bath of hot water

and carbolic acid (you will find proportions in your "Guide Book," page 198), and then you can stow them away with a pleasurable feeling. If you really mean economy, don't hesitate at the cost of a new quilt, a bar of soap or a bottle of carbolic acid, nor even at scorching your fingers a little when using the acid, and even this need not occur. You will find your are saving pounds in the lives of your bees and their health. "Why do people keep bees?" They do not keep them, they disappear and die, if the first elementary rules of health are not attended to.—J. SMALLWOOD.

DRONES IN JANUARY.

[8654] On the 22nd inst. I was asked to remove some bees from a house that was being repaired. They were established in a plastered wall, and under the floor of an upper room. The first thing I noticed was that drones were flying. I counted ten. I quite expected to find the colony queenless, but on the contrary, there was worker brood on five combs, and a nice-looking queen. They are now transferred to a frame-hive, and although most of the brood will be chilled, being a very strong lot I think they should do well.

What a remarkable season, no really cold weather yet; and drones flying in January. I thought you would be interested, as I believe this is very unusual. It is the first time I have ever seen them so early.—W. H. STOPPARD.

[It is very unusual but not exceptional. —EDS.]

BEE-KEEPERS' ASSOCIATIONS AND THEIR WORK.

[8655] The correspondence under this heading lately appearing in the "B.B.J." and especially the remarks of Mr. Jacques on indifferent committee men (page 507, Vol. 40) recalls to my mind a rather humiliating experience I had with this august body.

After having been connected with the Staffs B.K.A. for a good number of years, I ventured to think that my experience would be useful to the above association if I had a seat on the committee. With this end in view, I wrote to the Hon. Secretary offering myself for election, and at the same time stating that I was willing to increase the amount of my subscription to make myself eligible.

It will amuse Mr. Jacques and others to know that I was punished for my forwardness by not getting a reply to my letter, and since then I have never had sufficient courage to attempt a second application. Lately I am pleased to observe that my name in the list is printed in bold type, and adorned with a star, denoting that I am a qualified bee expert, for which honourable position I am grateful—it is well to be thankful for small mercies.

My view on expert work is, that no system of touring is satisfactory that allows visitation to be done only when asked for by the members. In my experience (which is not inconsiderable) I find that a regular tour covering the whole of the county, and arranged to be started and finished within a stated period (weather permitting) is the best and most appreciated by the members.

The bee-keeper knows that if he does not arrange to meet the expert when on his tour he cannot have him afterwards.

I trust that the result of this discussion will be that matters will be put right.—JOSEPH PRICE, Haden Hill, Old Hill, Staffs.

FLIGHT OF BEES.

[8656] In reply to Mr. Wilson's question (8645, page 32), regarding the specific gravity and weight of an *elastic* body immersed in a fluid, the specific gravity alters as the amount of the fluid inside the body is altered, and approaches nearer and nearer to that of the fluid as the amount inside the body is increased, while the combined weights of the body and fluid inside increase.

In the case of an elastic body enclosed within a rigid body and the whole immersed in a fluid, the specific gravity increases with the increase of fluid in the elastic body, and the combined weights also increase.

If the outside of the body of a bee is elastic, it would thus be able to alter its specific gravity by taking in air, but if it is rigid, it only increases its own weight by so doing.—ARTHUR F. HARDY.

CLASSES FOR JUVENILE BEE-KEEPERS.

[8657] I was pleased to see in the "B.B.J." of January 9th (page 18), a letter from a correspondent signing himself "The Drone," on education in connection with rural industries. This ought to awaken Bee-keepers' Associations to the amount of good to be done by starting classes for juvenile bee-keepers. When this is general, a great step will have been made towards the goal we have in view.

I find the work very interesting, the lads are keen, have no wrong methods to forget, ask any amount of questions, and, in fact, possess all the essentials necessary to make successful bee-keepers. The boys of my class belong to the Scout movement, and are trying to win the badge given by headquarters for bee-keeping. I am sure

every Scout-master will welcome help from anyone proposing such classes, and am equally sure whoever does institute them will find the work a pleasure.

The expense is not great; a "Guide Book" for the Scout-master, and the "B.B.J." weekly, to be handed from boy to boy, being all the outlay I found necessary, such articles as are needed for demonstration being loaned from my own stock. Trusting to see a great increase in this propaganda work in the near future. —G. J. Flashman.

RANDOM JOTTINGS.

By Charles H. Heap, Reading.

THE FUTILITY OF GERMICIDES.

In reply to my request for an explanation of the manner in which a germicide applied to the impermeable covering of a bee can destroy the germs of disease inside its body, Mr. Simmins has afforded us no real enlightenment, a great part of his article in "B.B.J.," Jan. 16th, being taken up in flogging a figure of speech, and in providing us with a dissertation on horticultural surgery. If bees were operated upon for "Isle of Wight" disease, there would be some point in Mr. Simmins's analogies; but it is not surgery but "materia medica" with which we are concerned.

I must, therefore, skip these entertaining matters, and concentrate attention upon the real issue. I am sorry Mr. Simmins has told us nothing that we had not already read in the Bee Journal. Long ago (I quote from memory), we were informed that the application of Mr. Simmins's germicide sets up a "merry hum" among the bees, and that the insects at once commence to lick each other clean! I doubt the joy of the hum, but that may pass. The question I asked was "How does the germicide reach the germs of the disease, which not only die in the lumen of the intestines, but actually pass between the cells of which their walls are composed?" To reach the nosema growths and spores in the lumen with a drug, is not particularly difficult, if given in a medium the bees will swallow; but it is a very different matter reaching the planonts of *nosema apis* which have found their way into what I will call the flesh of the second stomach and intestines. To illustrate this point, which is of supreme importance, let us think of a barrel of paraffin or creosote oil. To empty the oil from the barrel is a simple process, but to remove the oil which has soaked into the wood without injuring the barrel, would be a tedious if not an impossible task. In dealing with *nosema apis*, it is not enough to clear the channel of the gut; the minute organisms which get into the tissue have to be got rid of. That is why the treatment of the disease is so baffling. As far as I understand the matter, drugs that would destroy the planonts of *nosema*, would at the same time destroy the stomach and intestines, and thus the life of the bee.

Mr. Simmins asks me "why a germicide used in solution can and does, in fact, permeate the whole internal economy of the bee, which is of a nature peculiarly absorbent." This is on a par with the mythical Irishman, who answered one question by asking another; but with this difference, that Mr. Simmins asks, in an altered form, my own question. However, I may say that I do not believe that the germicide he refers to "does permeate the whole internal economy of the bee"; if it did, the bee would quickly be as dead as a door nail. I maintain that the only portion of the germicide in question which ever gets inside a bee, gets in through the mouth. The bee has an impervious chitonous covering, even the soft parts being, Mr. Cowan tells us, of the same material, which "is not acted upon by ordinary solvents, such as water, alcohol, ether or diluted acids, and differs from horn, which dissolves readily in a weak solution of potash." Mr. Simmins seems to suggest that his germicide enters the bee's body through the spiracles, but the spiracles are constructed so as to prevent access of foreign bodies. If they did not resist the entering of water, whether mixed with a germicide or not, the bee would die from suffocation. Mr. Simmins says that if I place a bee in water I shall see how little the "chitonous covering prevents the rapid swelling of the body to double its normal size." I confess that I have never observed this phenomenon; but I have noticed they look a little larger after being in water a few days. If a human body were soaked in water a sufficient length of time, it would swell considerably, but that would not be due to the action of the water, so much as to the gases created by putrefactive bacteria. The swelling of a dead bee in water must be attributed to a similar cause, because all animal bodies are composed of at least 75 per cent. of water.

To return to the internal application of drugs. Here we have the ordinary experience of medicine to guide us. The bases of germicides are well-known to scientists, and I have not the slightest doubt that Dr. G. S. Graham-Smith, who with Mr. Bullamore, carried out experiments with drugs on behalf of the Board of Agriculture, were acquainted with the disinfecting or antiseptic agents employed in the germicide to which Mr. Simmins appears to pin so much faith. Now this

is what these gentlemen say: "Up to the present, drug treatment of the affected stocks appears to have been of little value. Most of the records to which we have had access show that drug treatment in the great majority of cases has not produced any effect on the symptoms or rate of mortality. . . . So far as we know, no undoubted case of a permanent cure has been recorded. Considering the causative agent, we think it exceedingly improbable that any of the usual drugs will be found to be of value." For myself, I prefer to rely upon the scientific opinion of Dr. Graham-Smith, rather than the empiric opinion of Mr. Simmins.

It will perhaps interest Mr. Simmins and Mr. F. W. Wooldridge to know that I have had considerable experience of "Isle of Wight" disease, and that I have experimented with the germicide which Mr. Simmins so strongly recommends. I discovered the disease in my apiary at the end of July or beginning of August, 1911, and obtained a bottle of the mixture. I did not use an "inefficient rubber syringe," but I carefully followed Mr. Simmins's instructions. I splashed the liquid, and plenty of it, over the bees daily for a fortnight. Each time from thirty to forty drenched bees would crawl from the entrance and refuse to return. I thought probably the curative process would be accomplished by driving out the diseased bees. I wrote telling Mr. Simmins what was happening, and in reply, he asked me whether I was not over dosing the colony. After that I sprinkled the bees every other day until well into November, but the colony, although headed by a young queen, never recovered, and early last March I found it was badly affected and so were other stocks, in spite of the fact that I had been most assiduous in sweeping up all dead and diseased bees from the ground. I had some of the mixture left, and dosed this colony and another. I found the queen of the colony, dosed for the first time, dead outside the hive next morning; and the queen of the colony which had been treated in the autumn was cast out the second day after treatment. I did not requeen this colony, in fact I could not, but to the other queenless colony which contained a good number of bees, I gave a young queen (brushed over with a germicide), and the brood from another colony that was fast dying. These built up into a moderate colony, from which I got 15lbs. of honey, but in the autumn they died. Mr. Simmins has a good deal to say about the necessity of young queens heading diseased stocks, but I may tell him that already I have lost six stocks headed with young queens raised naturally last summer.

In my opinion the cheapest and best method of treating a stock suffering from "Isle of Wight" disease is to destroy it. It is folly to throw good money after bad. Mr. Wooldridge hopes for an immune strain of bees. I hope too, but I do not expect to see them even if I live as long as Old Parr is reported to have done.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Curing Spring Dwindling.—Mr. Root, in *Gleanings*, proposes a scheme for accomplishing this by taking bees without combs in spring from Florida, or other of the Southern States, in one or two-pound packages and adding them to the weaklings with good queens, who otherwise might go under before early nectar sources are available to start and keep up breeding. He anticipates "that his plan will save hundreds of valuable queens and put new strength and vigour into nuclei that would otherwise struggle along all the summer without furnishing any surplus." The process is much the same as the one we have practised for long when we brought driven bees in autumn to strengthen our nuclei and weaklings in order that they would be fit to safely outlive the winter. Hitherto, bees without combs have not been transported from one State to another.

Value of Queens.—An Australasian writes to *Gleanings*: "If I were asked what assures success in bee-keeping I would reply the quality of the queen. The queen first, the queen second, the queen third, and the queen every time. Given good queens and bad management you will get honey; given bad or indifferent queens and good management, you may get honey." I would subscribe to all this with this addendum that, providing the good queens is good management.

Bee Veils.—Mr. Arthur C. Miller has recently been making several interesting and welcome incursions on the field of bee literature, and his latest on bee veils is thoroughly readable. Here are a few extracts: "A bee veil is a necessity, and a nuisance, only some of them are more so. There are almost as many kinds of veils as there are bee-keepers, but often none are to be had when most wanted. My own veil has proved as satisfactory as a veil can, for mere man will never enjoy a veil for a veil's sake. Mine sits comfortably, stays in place, permits freedom of movement, and allows a free circulation of air. It is durable, and looks as well as such things can. But—you will have a more pleasant time if you keep decent, good-natured bees, and dispense with a veil altogether—or almost." I like the two last words best, but the veil looks quite like many we have on the market.

"*Kill to Cure.*"—The drastic measures I have lately recommended in dealing with disease seem to be too advanced for some of the weaker-kneed brethren. Here is what they do in America. A member of the Bureau of Entomology in California said, "Few inspectors in California now recommend the shaking treatment, as the time required to *treat* the disease is of more value than the bees destroyed, the method fast coming into favour is that of boiling up the diseased bees and combs in a large tank." "In Texas," writes another well-known inspector, "shaking has not proved satisfactory, and the line they now work on is to sulphur the diseased colony, and then burn bees, infected combs, &c." At this meeting of State inspectors it was put on record that the difficulty with bee-keepers was complying with requests for a visit as so many were eager for their services. There they get their beemen "to comply with the law just because he sees the *advantage* it brings him."

In Canada, too, all are eager for visits, and the complaint is that they have not sufficient inspectors. Mr. Holterman writes on this head in the *Canadian B.J.*: "Is it wise to seek to develop the industry and allow it to be wiped out by disease for *lack of funds*? Why has not Government long ago contributed to its eradication?"

From the *Australasian Bee-keeper* I learn that they (bee-keepers that is) are clamouring for more rigid rules and more drastic treatment. They desire all bee-keepers to be registered, and that the Government would make inspection more general and more thorough. As one man put it, "The whole question resolves itself into this: they wanted more inspection. If a man would not keep his hives clean he should be compelled to do so" by the strong hand of the law.

Over-ventilation.—Mr. Hand asserts that this "kills more bees in outdoor wintering than any other one thing, except actual starvation, and the fact that bees will survive the winter and come out alive in spring with an entrance so large as to be entirely out of all proportion to the needs of the colony, only proves the wonderful powers of endurance of a strong, healthy colony of bees." He advocates an air-chamber under the brood body-box, on the same principle as we use the W.B.C. 3in. eke. The idea is an excellent one in many ways. Very varied opinions are held in regard to the best winter entrance, some believing in a very large one, others in a mere bee-space for the exit and entrance of a single bee. A great deal depends on locality, and more on the strength of the colony. A powerful lot would be best with an entrance 8in. by $\frac{1}{4}$in., a good colony should have 6in. by $\frac{1}{4}$in., while a fairly good one would be best suited by contracting to 4in. Weaklings would do with $\frac{1}{2}$in. by $\frac{1}{4}$in.

Removing Propolis.—"The best thing I ever got to remove propolis is borax. Put the hands in warm water, dust some borax on them, then rub the dry powder well over the hands. The grit just loosens the sticky stuff nicely, when it will wash off easily. Try it and you will be glad!"

Depth of Frames.—This perennial old nut is still being dealt with, and several "over there" are trying to crack it. Dr. Millar in the *American B.J.*, pertinently says: "I happen to know of one apiary where last winter's losses were exceptionally heavy, and the frames were deeper than Simmins'." The Editor informs that gentleman that "if he were more familiar with the American diversified climatic conditions he would probably conclude that the size and shape of the frame is not so material as he seems to believe. For Mr. Simmins' benefit we may state that the losses last winter were just as severe on one class of frame as the other." I will apply a convincing test. For the last thirty years Mr. Simmins has been hammering away in his advocacy of a deeper frame, and even now his words are looked on as the voice of one crying in the wilderness. I would not be far out if I put down the number of his hives as being .0001, or one out of 10,000. My estimate is on the liberal side.

Value of Protection.—"Although it was a warm day in September, this bee-keeper was applying carpets, bed-quilts, warm cloth wrappings and other forms of protection as liberally as one might expect to see with the thermometer below zero, and I learned that if we keep bees warm they will work. In this apiary there was no desertion of bees from supers on cold nights; the bees kept hustling every minute." The value of wrapping is certainly often under-estimated. Working for a late flow, when nights begin to chill, the bees ought to have as warm wrappings overhead as would be deemed sufficient during the severe weather of midwinter.

Paper Round Foundation.—"Personally, I see no reason for that sheet of paper going with each sheet of foundation. I have received and shipped hundreds of pounds not so papered without loss. Surplus foundation should never be papered by wrapping each alternate sheet, for the process of removing is slow and tedious. When a package has been crushed down by pressure, or when a parcel of foundation is in any way over-

heated, it may at times be an advantage to have a sheet of tissue paper between the layers."

Queries and Replies.

[8585] *Stock found Dead.—Candy-making.*—(1) I opened my hives a few days ago to see if any candy was required and found all (twelve) appeared to be quite all right, with the exception of one, in which every bee was dead. I shall be grateful if you can tell me the cause of death. They had not commenced on the candy, and there are three or four frames in the hive still heavy with honey. (2) A friend, living about one mile from here, bought a large swarm last season, and they settled down quite happily, but on looking into the hive just before Christmas there was not a bee in it either dead or alive, but plenty of stores! Can you possibly account for this in any way? (3) I was making some candy a week or so back, but after I put the Naphthol Beta solution in, the liquid sugar became quite yellow, and refused to cream when the pan was plunged into cold water and stirred. I boiled up again with the same result and yet again, and then gave it up. Next day I tried again with some sugar from a different shop and was quite successful. Had I boiled it too much or not enough? The colour is that of barley sugar, such as children buy in sticks. Can I use it for syrup when spring feeding time arrives? —M. H., Essex.

Reply.—(1) The bees were too decomposed for us to form the slightest idea of cause of death. (2) Probably the queen was lost in hiving. (3) You evidently put in the Naphthol Beta too soon. If made from cane-sugar you can save it for spring feeding.

[8586] *Nature of Pollen Grains.*—Will you kindly inform me through your valuable paper what is the nature of pollen which the bees collect from the flowers? (1) Does it contain any nitrogenous substance? (2) Do not the bees mix up pollen and honey as a food for the young bees? (3) If you have an analytical report of pollen I should value much the chemical formula of same.—A. W., Ilfracombe.

Reply.—(1) and (2) Decidedly, yes. (3) There is no chemical formula for pollen-grains. They are composed of an outer coat formed largely of cutin, and containing colouring matter varying with the different species. There is a delicate inner coat—the intine—composed of cellulose. The contents are proteid matter (the nucleus and protoplasm) with food reserves of oil, and occasionally starch, and these cannot very well be expressed in a chemical formula.

[8587] *Parasites in Combs.*—I have ten hives of bees, and I should like some enlightenment through the "B.B.J.," *re* some small insects found on dry pollen at the bottom of cells, also a grub found working his way through the cell-walls. At the close of season, 1912, I removed several brood frames from my hives, which, to all appearances, were empty and clean, except for a few cells which contained pollen. I placed the frames in the attic, which is perfectly dry, and on examining one a few days ago I found in the bottom of two or three cells some small insects, which are just visible to the naked eye, and with a good light can be seen moving about on the dry pollen; they appear yellow in colour. The grub was about $\frac{1}{32}$in. wide, $\frac{3}{8}$in. long; it had eaten its way through several cell-walls and woven a silky kind of tunnel about 2in. long. Is this the result of the wax-moth or the ordinary cloth-moth? Also are the insects the louse spoken of in the "Guide Book" as frequenting the hives.—F. R., Doncaster.

Reply.—The combs are infested with the pollen mite. The grub you mention is that of the smaller wax-moth. The best course to take will be to melt the combs down for wax.

[8588] *Removing bees from a Wall.*—I should like your advice through "Queries and Replies" column on the following matter: I have discovered what appears to be a strong stock of black bees in the outer wall of a timber-framed, weather-boarded cottage, and I should like to secure it if possible. The bees enter through a hole above the framework, which is bedded on brickwork about 1ft. above ground. I propose to make a rough hive to take five or six standard frames and place it close to the hole, then connect the latter to hive by means of a deal tube about 3in. by 1in., and block up the hole so that bees must pass through the tube and hive before they can get access to outer air. Do you think the plan feasible? The points I should like answered are these:—(1) Will the queen leave the cottage wall and breed in the hive? (2) If I put hive in position now, when would be the time to remove it? (3) If I wished to remove the bees from their present home, direct into a hive, how should I proceed? —W. A. D., Chigwell.

Reply.—(1) It is possible, but we are doubtful of her doing so. (2) If the queen took possession, you could fit a "Porter" escape to the hole and remove the hive when you had obtained all the flying bees. We should say this would be about May. (3) The better plan would be to remove

part of the wall, so that you could get at the bees. Cut out the combs and tie them into the frames, then stand the hive with the entrance as close as possible to the original one in the wall. This operation should be carried out on a fine warm day in April.

HOMES OF THE HONEY BEE.

APIARIES OF OUR READERS.

We have pleasure in presenting this week a picture showing Mr. F. Bird—a "working-man" bee-keeper—his family, and part of his apiary. As is usual with an intelligent and industrious owner, the bees are doing well, and giving him a good return for his expenditure of time and

MR. F. BIRD'S APIARY, LITTLE CANFIELD, ESSEX.

labour. Mr. Bird does not forget to acknowledge the help given by his wife, who appears to be a true "helpmeet" in every sense of the word. He says:—

"The photograph which I send shows only part of my apiary. I began bee-keeping about seven years ago, when a neighbour lent me "Modern Bee-keeping," and gave me my first lesson. (He was not a very modern bee-keeper as he had kept bees in frame hives for several years, and was afraid to take a frame of bees out.) He lent me an empty hive as a pattern, which I copied, and now make nearly all my own hives and racks, having had some lessons at a technical carpentry class. The roofs are of boards, felt, and thin corrugated iron, and they are quite snug and rain-proof, the only drawback being their weight. When my first hive was ready I stocked it with a swarm, for which I paid 8s. 6d., and have now increased to twenty-five stocks. The hives may appear rather close together, but I have had no trouble from this up to the present. I sometimes make artificial swarms, and find if a queen-cell or virgin queen is given, a small bough tied to the front of hive is a good mark for her to distinguish the right hive when returning from her mating flight. I shall never forget taking my first sections, with thick leather gloves on, brushing and shaking the bees off in front of the hive. This is a good district for clover honey and I have taken several prizes at local shows. I could not manage so many stocks without the help of my wife, as I am away at work, but she cleans and puts foundation into sections, hives any swarms, and also does most of the extracting and bottling.

I had my best "take" in 1911, when I secured over 100lbs. each from several stocks; and my worst season was 1912, when I fed over 3cwt. of sugar. There is not a great demand locally for honey, but I bought a card, "Honey for Sale," which I framed and put up in the front garden, and placed a few glazed sections and bottles in the window, and have in this way taken as much as 14s. at the door in one week.

I have some pigs and poultry, but find bees more profitable and interesting than either of these.

I am pleased to say I gained my third-class certificate in 1912. Hoping the present year will be a prosperous one for all bee-keepers."

ERRATA.

In list of candidates who successfully passed the second class examination for B.B.K.A. Certificate (page 31), for Rev. W. E. Mallinson, read Rev. W. E. Mattinson.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

W. H. (Par Station). *Removing Bees from a Tree.*—Do not attempt to remove the bees until warm weather comes in April or May, if you want to secure the stock.

A. R. (Sowerby Bridge).—*Painting W.B.C. Hive.*—There is no necessity to paint the inside of the outer case, as it is not exposed to the weather.

T. P. (Ipswich).—*Death of well-provisioned Stock.*—From some cause, what we cannot say, the bees dwindled, until there were not sufficient to keep the brood warm. Therefore it became chilled, and this accounts for the dead brood. We cannot find any disease in comb sent.

J. E. J. (Pontardulais).—*Dysenteric Bees.* The bees were, no doubt, taking their usual cleansing flight, or the symptoms may indicate either dysentery or "Isle of Wight" disease. It is difficult to say without seeing the bees, but we are inclined to think it is the former complaint.

C. T. (Ivybridge).—*Studying for Expert's Examination.*—You have all the books necessary. If you study those carefully and obtain plenty of practical experience, you should be able to pass the third class examination.

C. W. G. (London).—*Chemistry and Bee-keeping.*—You should purchase "The British Bee-keepers' Guide Book," by T. W. Cowan, 1s. 6d.; "Cheshire's Bees and Bee-keeping" (scientific), 7s. 6d., would also be very helpful. Both books can be had from this office. You might also attend the lectures given by the British Bee-keepers' Association, at the Lecture Hall, Zoological Gardens, on Thursdays.

Suspected Disease.

W. R. A. (Norwood) and H. R. (Marlboro').—The bees have died from "Isle of Wight" disease.

C. B. (Weybridge).—The bees were too dry for examination. The comb-honey is quite fit to eat, but we should not advise giving it to bees.

E. H. (New Barnet).—The bees sent have died from "Isle of Wight" disease. Your best plan will be to suffocate the remaining bees, burn all movable parts of the hive, and thoroughly disinfect the latter before using it again.

G. V. B. (Wrea Green).—The bees have died of "Isle of Wight" disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

FINEST ENGLISH HONEY, 15s. per 28lb. tin; sample, 2d.—DUTTON, Terling, Essex. v 34

SMOKER FUEL.—Fustian Clips, large parcel, 6d., post paid.—MILLWARD, Stricklandgate, Kendal. v 71

FOR SALE, five 1912 Skeps Bees, 14s. each.—J. WAYMAN, Cottenham, Cambridge. v 64

WHAT OFFERS?—1¾cwt. Dark Honey, pure, suit confectioner.—NIGHTINGALE, Doddington, March. v 6

"BRITISH BEE JOURNAL," Vols. 31, 32, 33, 34, 10s.; "Bee-keepers' Record," Vols. 21, 22, 23, 2s. 6d., unbound, perfect condition.—SALT, Sunnyside, Mickleover, Derby. v 65

2½CWT. LIGHT CAMBRIDGESHIRE HONEY, in 12lb. and 14lb. tins, 62s. per cwt.; also 1cwt. medium colour, 56s. 6d. per cwt.; cash with order; sample, 3d.—J. YOUNGER, 51, Maid's Causeway, Cambridge. v 66

HONEY, from own apiary, good flavour, 28lb. tins, 65s. per cwt., or 7d. per lb.; sample, 2d.—T. EVERETT, Soham, Cambs. v 70

20 DOZEN JARS FINEST QUALITY HONEY, 9s. 6d. per dozen; orders booked for Swarms, May 3s., June 2s. 6d. per lb.—W. BUTLIN, Sunnyside Apiary, Hartwell, Northants. v 68

WATERMAN'S IDEAL FOUNTAIN PEN, medium pointed, complete, in box, never used, 6s. 6d.; letters.—DOUGAL NAIRN, Tircarra, Broughty Ferry.

PURE SOMERSET HONEY, granulated, one gross, in 1lb. screw cap jars, 8s. 6d. dozen; cash or deposit.—F. HARRIS, Shepton, Beauchamp, Seavington, S.O. v 60

GRANULATED HONEY, good quality, 56s. per cwt., f.o.r.—J. PRATLEY, Burford, Oxon. v 58

HONEY, light, superior, 28lb. tins, 15s.; sample, 2d., cash with order.—BROOKS, Ashingdon Apiary, Rochford, Essex. v 56

HERTFORDSHIRE HONEY, excellent quality, ½lb. and 1lb. screw cap jars, 5s. and 9s. per dozen.—Apply H. A. ROBERTS, Wimborne House Apiary, Sawbridgeworth. v 43

Editorial, Notices, &c.

WORCESTERSHIRE B.K.A.

ANNUAL MEETING.

The annual meeting of the Worcestershire Bee-keepers' Association was held at the Central Coffee Tavern, Worcester, on Jan. 27th, Dr. W. Moore Ede presiding over a large attendance of members.

The report of the Committee stated that the work of reviewing the past year from the bee-keeper's standpoint was depressing in more ways than one. The very wet season reduced the honey harvest sadly, and the periods when the bees could work profitably were so short that only those who had their stocks in a condition to take immediate advantage gained much benefit. Disease had made sad havoc among the bees. The one compensating point was that the quality of the produce was invariably high, and those who sold honey found an easy market at good prices. Since the Worcestershire Association was re-organised thirteen years ago, each of the various districts had had a local expert to assist and to advise members. On the whole, the system had worked remarkably well; the choice of suitable weather for visits was easy, and the expert could often fit the date and hour of his calls to the convenience of those concerned. But the difficulty in replacing experts after resignations had been often found, and in some cases formerly prosperous districts had been unavoidably neglected, and groups of members lost. This season it was found necessary to have a special expert to take the tours in several of the districts, and Mr. C. H. Heap was appointed. His work had been of special value, as he had had much experience of the dreaded "Isle of Wight" disease, and in several cases he had discovered for members the disease in an early state.

The work of instruction in bee-keeping under the County Education Committee had been carried forward with very satisfactory results. The Committee were disappointed that advantage was not taken of the offer of practical instruction at apiaries, as it was a most valuable part of the scheme. A competent instructor would be sent to any apiary where a few persons interested in bees could meet, to give a conversational lesson, illustrated by manipulations of the stocks among their ordinary surroundings. Mr. Herrod had examined two candidates for the third class expert certificate in August, and Mr. H. E. S. Viner passed. Some splendid honey was staged at the annual show, and, for the poor season, the number of entries was quite satisfactory.

On the motion of Mr. Bracken, seconded by Mr. Smith, the report was adopted.

The Treasurer's report showed that the adverse balance of 11s. 11d. last year had been changed to a balance in hand of £2 0s. 2d. The number of members of the Association had been reduced from 206 to 183, although 11 members from Colwall had been transferred to the Herefordshire Association.

Moving the adoption of the financial statement Mr. Millward said the Association was to be congratulated on having such good officers as the Secretary and the Treasurer.

Mr. Whiteman seconded, and the statement was accepted.

Canon Coventry had written asking to be allowed to withdraw from the position of President, but the Chairman said they could not do without him, and he suggested that they should ask Canon Coventry to reconsider his decision.

Mr. Millward proposed, and Mr. Bracken seconded his re-election, and the motion was carried.

The whole of the vice-Presidents were re-elected.

Mr. J. Phillips and Mr. P. Leigh were elected as Joint Secretaries; Mr. Moreton, Treasurer; Mr. C. C. Duncan, Librarian; Messrs. Huband and Millward as Auditors, and Mr. G. Richings, Assistant Secretary for shows.

The following were re-elected as the Committee: Canon Coventry, Miss Johnson, Miss Turner, Messrs. G. Bracken, J. L. Brierley, C. K. Coutts, C. C. Duncan, C. H. Haynes, G. F. Hooper, T. Huband, P. Leigh, C. A. Lloyd, E. A. Millward, H. March, J. Price, G. Richings, and W. J. Smith.

The Secretary, Treasurer, and Mr. Haynes were appointed as representatives to the meetings in London of the British Bee-Keepers' Association.

After the meeting an instructive lecture (illustrated by lantern slides) was given by Mr. W. Herrod, Secretary to the British Bee-keepers' Association.—*Communicated.*

CINEMATOGRAPH AND BEE-KEEPING.

The beautiful series of films depicting Bee-keeping, which have been shown by Mr. J. C. Bee-Mason at the London Opera House during the past three weeks continue to attract much notice. This week the subject is the "Production of Honey," and Mr. Bee-Mason graphically describes the work, so well-known to those initiated into the craft, of fitting up and putting on section-racks, the process of making "British Weed" foundation at Messrs. Lee and Sons factory, the removal of the honey from the hives, its extraction from the combs, and, finally, bottling for market. The only fault in the series is that it is too short.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By George Hayes, Beeston, Notts.

HOW TO STUDY POLLEN GRAINS.

(*Continued from page* 32.)

In collecting single flowers such as the crocus or anemone, it will be best to take those just about to open, cut off with a portion of the stem, and when you get home place each in a separate vessel of water (small, narrow-necked bottles do for this purpose) and set them in a sunny window; then generally by the next day these flowers will have opened. The thin pellicles of the anthers will dry and crack one after another, and release the pollen grains, which are then ready to be taken.

If it is a bunch of flowers, say of apple, a raceme of sycamore, or an umbel of the carrot, one will, of course, take the cluster on which are found the single flowers in all stages of development, cutting off those that had opened, and treat the others as for single flowers.

In cases where for some reason or other it is not possible to remove the flower—for such do occur occasionally—pollen must be obtained on a glass slip from a blossom that is open and ripe. In some of the genera there is difficulty in finding the stamens, as they are not exposed until after they would be useless for this purpose, more especially is this so with the clover family. It will be rather tedious at first to get the pollen from these small flowers, because each individual flower has to be picked off, and the lower petals—which are folded round the anthers and stigmas—taken away in order to bare them. Care must be exercised in doing this, or all the pollen may be thrown out from the anthers as they are reached. I find it best to have a larger strip of glass, say 3in. by 2in., and open them over this, holding the flower at the stalk end with thumb and finger of the left hand. Then, with a pair of tweezers in the right hand, remove the petals and liberate the pollen on to the glass until there is sufficient. This can then be scraped off with a penknife into a tube for preservation.

If you wish to examine pollen grains dry—and by dry I always mean just as they leave the anthers—get a 3in. glass slip, and having well cleaned it, breathe on it gently and then touch a ripe anther with it. Or if you draw it across the anther it will generally leave an abundance of pollen in its track, in fact, often too much, so that it is best to at once strike the edge of the slip on your finger or elsewhere, to dislodge all you can, you will then have quite sufficient left for examination. In some flowers it will be necessary to remove an anther, which can be done by taking hold of the column or stalk and picking it out, then drawing or dabbing it on the slide.

If the pollen grains are to be mounted in this condition it will be necessary for the sake of appearance to get some of the grains in the middle of the slide. Then get an ebonite ring and cover both sides with either gum dammar or Canada balsam, and place it in position in the centre of the slide. This position is quickly found if you get a piece of white cardboard the same size as the slips, with the centre marked on it, and place it under the slip whilst fixing the ring. Then take a cover glass which has also been carefully cleaned, and place it in position on the ring, applying a little pressure to make them adhere. Label it, and put on one side to set.

If you wish to mount the pollen grains in a medium, it is best that they should soak in it for a day or two. When ready, get your ringed slide, put a thin coating of gum dammar on the ring, then with a pipette lift the medium and pollen grains together, and put them gently into the ring until you get it heaped up, which you may do with care. Then, with your tweezers, pick up the cover glass, breathe on it, and place it in position on the ring, carefully putting the edge nearest to you down first, and as it is gradually lowered it will push the superfluous moisture away, and in this way it should be sealed up without any air-bubbles.

To Examine.—Take a slip containing the pollen grains which you wish to examine, place it on the stage of the microscope, then, with your 1in. objective, search for the grains, and when found, select a few which appear to be best distributed. This done, change your objective to ½in. or higher as required, note the colour of the grain first by transmitted light and then by reflected light. Describe and note it as near as you can, for it will sometimes be found difficult to fix upon the right *shade* or *tint* owing to a number of circumstances about which I may have more to say later. Next note the general outline; and by manipulation of the fine adjustment screw, the form and markings can be made out. Now take a thin glass or steel rod—a good thick needle will do—and place a small drop of olive oil on the slide where the grains are, and with the bristles move them about whilst under observation. This is easier said than done by a beginner, as he will find, but practice will enable him to succeed. As the grains roll about you can get a clearer conception of their form. After this place a drop of water on another part of the slide, and watch the change in the form of the pollen grains which usually takes place.

I find it best to make a drawing of the main characters, as it prevents mistakes, because it is not always possible to carry all in one's mind.

The beginner, without these instruc-

tions, when he first sees the grains magnified, would think that he had got quite a *variety* of pollen grains, so different do they appear from each other in general outline; but this is owing to the different angles and positions in which they lie. This in later practice is beneficial, as it enables him to come to a definite conclusion as to their form more quickly, because through the microscope we can only see the pollen grain—small though it is—at one plane, or a bit at a time. When we get the top clear and sharp—that is when it is in focus—all the rest is dim and partially obscure. When we get the centre focussed both top and bottom are indistinct. We have, in fact, to look at the grain bit by bit, as it were, then piece the whole together. More especially is this so for details of the markings, &c.

(*To be continued.*)

AMONG THE BEES.

By D. M. Macdonald, Banff.

HIVE ENTRANCES.

The process of adjusting the slides of a hive in order to secure the best size of entrance at different seasons of the year and under different circumstances is a high art. The miserably inadequate space for entrance and exit of bees in our forefathers' skep-hives was an eyesore to me, and even as a boy I often wished that I could have enlarged the "ports," as they were designated locally. In times of strain and stress, such as the issue or return of a strong swarm during a full flow from the white clover almost at their very door, or when heather not far away was yielding its richest and best on some glorious August day, what turmoil and confusion, and what a sad interruption of traffic these tiny openings produced. Now we have learned wisdom from experience, and when our colonies are at their strongest we give them an entrance the whole breadth of the hive, with a depth of from $\frac{3}{8}$in. to $\frac{5}{8}$in.

With a double body-box for a brood-nest during a rich flow in very warm weather this is none too large; while in a period of excessive heat it is advantageous to prop up the whole front of the hive, not only to give ample room for exit and entrance, but in order to supply that abundant ventilation which proves such a boon to the busy toilers when a congested set of circumstances prevails. Herein I have discovered, aided by an extra super area, is one of the best swarm preventives—to be used only, however, in certain seasons, or under exceptional spells of excessive heat.

Now let us leap to the other extreme. I am prepared to assert that during a great part of the winter our entrances can scarcely be too small, provided other aids to secure the necessary ventilation are supplied. I have tried three small tubes, each with a hole a little larger than permitted the passage of a single bee, and the colonies wintered admirably. Regular entrances contracted to $\frac{1}{2}$in. by $\frac{1}{4}$in. did very well indeed, but with strong colonies the length allowed was in general the full inch up to 2in. Small entrances are beneficial in many ways. They effectively exclude mice and other vermin; they shut out drifting snow; they prevent chilling winds from penetrating into the interior; they save guards defending the citadel when robbers are about; and they afford just about enough and not too much ventilation. A bee-keeper of wide experience lately told me he was positive that far more bees are lost while wintering from too large entrances than from any other single cause. The very large entrance I have advocated during summer, and the very small one during the depths of winter are extremes; and it is when we seek to make nice discriminations during the intermediate periods that judgment and care are most necessary. Too much haste should not be used in enlarging entrances in spring, or, indeed, during the entire month of April and early May. Bees are expanding the cluster then, and outside seams are easily chilled. Brood is being nursed over a wide area of comb surface, and the internal heat is therefore necessarily kept at a high temperature; so an undue expansion of the entrance would make the workers' labours more arduous to maintain the requisite warmth. Now it is that guards and ventilating bees can have their hard work lightened by judicious manipulation of the slides. A small entrance will enable more bees to go afield in search of nectar, pollen, and water, all so necessary to carry on the work of increasing and multiplying the population. Small doorways, comparatively, will aid breeding, feeding, capping, nursing, defending, ventilating, and ovipositing, and they will help to conserve vigour and save bee life.

Gradually enlarge the entrances as weather improves and sources of forage increase, until in June, the date depending on the nature of the season, slides are completely withdrawn; or, in extreme cases, used to prop up the hive front. With the advent of August, we (hereabout at least) have extremes of both heat and cold. During the heather-flow very warm days are frequently followed by chill nights, so I do a lot of enlarging and contracting entrances. Supers are wrapped up very warmly, and the doorways receive almost daily attention. It is grand on a fine day to see the wonderful stream of foragers pouring home loaded with the amber nectar, so soon to be converted into luscious heather honey. With a wide

entrance there is no confusion of traffic, the outgoing and incoming workers finding room and verge enough for their comfort and convenience. At times the big, burly, clumsy drones make a hubbub, but the prescient little workers soon end that.

I like to guard against night chills by pushing in one of the slides to lessen the doorway after field labour for the day is at an end. Then when the flow comes to an end, and robbery becomes a pleasure and delight to many bees, slides are best pushed pretty well home to exclude these would-be depredators. The warmth engendered aids the maturing of the recently-gathered nectar, the sealing of cells, and the comfort of the colony. The necessary labour of all this manipulation during the year is far lighter than might be supposed, and, being a labour of love, is not real work.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

COMB-BUILDING IN DECEMBER.

[8658] In your issue of "B.B.J." for January 23rd, a correspondent wrote on "Comb-building in December."

I have a small experimental stock of bees, formed from a small lot driven on October 13th, and hived on two frames containing about 6lb. of sealed honey and a little unsealed food. Two other frames partly drawn-out were placed at the side. The bees were fed with syrup for about a fortnight and then candy was given. Towards the middle of November they appeared to be dormant, but at the beginning of this month they began to feed, and fresh candy was required. In six days they took down a 1lb. cake and built a comb in the box, firmly fixing it down. On Friday, January 14th, I cut a fresh feedhole in the quilt and placed another box of candy immediately behind the old one. The bees were then well spread over the combs. I intend to keep on feeding but to give candy with pea-flour in it. I believe this lot has either started rearing brood or will soon do so.—Fredk. W. Sibley, Mont.

DRUGS AND "ISLE OF WIGHT" DISEASE.

[8659] Two errors crept into my article on "The Futility of Germicides" in last week's issue of the "B.B.J." I am made to speak of "germs of the disease ("Isle of Wight" disease), which not only die in the lumen of the intestines," &c., the verb "lie" should be substituted for "die," which makes a considerable difference to the meaning of the sentence. The other error probably arose through an interlineation being placed between the wrong lines. Towards the end of the article it is stated that a young queen in an experiment I made was brushed over with a germicide. It was not the queen, but some frames of comb and brood taken from this queen's original hive that were brushed over with germicide. As an old white-wash brush was used for the purpose, the brushing of the queen with this instrument would have been a rough operation.—Chas. H. Heap.

FLIGHT OF BEES.

[8660] Mr. D. Wilson (page 32), January 23rd) raises an interesting point as to the specific gravity of insects when they have a maximum of air enclosed in their bodies, as compared to the same insects with a minimum of air; and more definitely of a bee on the wing and the same bee in the hive.

The bee on the wing with its air cavities filled, as pointed out by Dr. John Hunter and other scientists, is relatively lighter. Its specific gravity is less, that is, its weight as compared with a quantity of water of exactly the same bulk. And therefore it *more nearly* approximates to the air through which it flies. Take a small balloon, and fill it with air. The push which sends it soaring upwards for feet, would raise the empty balloon perhaps the same number of inches. The inflated balloon, like the inflated bee, is of less specific gravity, and is *nearer* to floating, or rising, in the air, instead of falling to earth.

But another force assists the bee, which, so far as I know, has not been mentioned by scientists. The enclosed air is warmer, and therefore lighter, than that outside. Every centigrade degree of heat adds $\frac{1}{273}$ to the volume of air contained. Thus, this air is lighter in weight than the medium through which it flies, and so still further the specific gravity of the bee on the wing is lessened.—John W. Moir.

THE COMPOUND EYE.

[8661] In reply to Mr. Crawshaw (p. 36), I may say the statement in question should be altered to read, "If and supposing the Leeuwenhœek experiment proves nothing with regard to the function of the compound eye as a whole, then neither does the one with the cones in position."

The former experiment is conclusive that each corneule can form an image of

an object suitably placed. The latter experiment tends to show that the interposition of the cone robs it of this power, and that the facets as image-forming lenses are superfluous.

I cannot regard the second experiment as conclusive. Anyone observing a section of a compound eye of the honey-bee under the microscope can hardly resist the conclusion that the cone is an essential part of the optical system, and one would not be surprised to find that it acted as a diminishing lens, forming, in conjunction with the light-collecting corneule, a minute and consequently brilliant image. But the second experiment referred to tends to show that *form* is not transmitted, but only *light*.

I do not know the exact conditions under which this observation was carried out, but if the compound eye be adapted for distant vision in a real sense, any attempt to get an image of a near object, such as the watch dial in Cheshire's experiment, must fail when the optical parts of the eye are all in position; that is, if the well-known optical laws apply.

It appears to me that the light should not be taken from the mirror, but direct from the object—say a fairly open landscape with a number of conspicuous objects distributed throughout—and since whatever power the insect may possess of focussing its eye upon any particular object that power is lost to us in our experiments, the result would possibly be rendered more or less abortive by the blurring of the image due to those portions of the view that were out of focus.

At the end of the paragraph referred to by Mr. Crawshaw, "image (if one)" should be "images (if any)." I agree with all that gentleman says. It is just this, that whereas the human mind has usually two stereoscopically-formed images to reconcile, the bee has probably thousands of such, arranged in two groups, which afford a very extended outlook. It is reasonable to suppose that in the compound eye nature has evolved an organ of vision more effective and better adapted for the purposes of its possessor than a simpler organ occupying the same space could possibly be. Nature proceeds from the simple to the complex, and the keynote of evolution is progress and increased efficiency in everything vital to an organism.

Mr. Desmond considers the compound eye to be perfectly adapted for taking stock of an object whilst the insect is in rapid flight. But I do not think he will deny that such an organ is even better adapted for taking stock of the same object from a position of rest. We must not forget that the insect has apparently no means of modifying the light which enters the eye, and if that is so then it is not likely to be inconvenienced by any conditions that may obtain, as is, say the owl, or man, or any animal possessing protecting lids and an adjustable iris. As to no bird having an eye as small as an insect, is that quite correct? At any rate, relatively to size few birds have an eye so large as the bee, and in birds of prey the eye is always in some particular a striking feature.

Can anyone name an insect having perfectly developed encone eyes which could have no possible use for other than near vision, and yet which is also possessed of perfect ocelli?

An extract from Darwin's "Origin of Species—Organs of extreme perfection" will bear repetition here: "And may we not believe that a living optical instrument might be thus formed as superior to one of glass, as the works of the Creator are to those of man?"—G. M., Northants.

DELUSIONS ABOUT BEES.

[8662] More bee-keepers than myself must be astonished at the loquacity of the "new Solomon," who, from the chief village of a remote island of the Outer Hebrides, has come suddenly upon our horizon to judge and condemn our prominent writers. See "B.B.J.," Dec. 19th (page 505), and Jan. 9th (page 16).

He a "Science Master," talks so unscientifically that if one of his own "boys or girls" had produced such abstruse reasoning, he ought to cane the perpetrator of the atrocity. His "facts" are so crude, inexact, and misleading as to show, just what he himself admits, that he has not given them "much attention," and, moreover, they prove his own words again, that in bee-keeping he is but a "novice of yesterday." Such undigested hash may do when he is preaching in his ain kirk, but forms poor food for adult bee-keepers.

Modern bee journalists, instead of being plagiarists of Aristotle, Virgil, &c., rather lean to the other extreme, and make the whole delightful pastime too much of the Trans-Atlantic bread-and-butter type, and have cast all "delusions" into the dust-bin of the forgotten past; the necessities of our go-ahead time making them all wide awake and up to date.

Our village bee club,, after carefully debating the whole affair, hereby declares our conviction that the idea that the queen was mated "on the porch of the hive" is a *delusion*, which could not have entered the head of any but a bee-keeper in the chrysalis stage. We further express our astonishment that anyone seeking to teach apiculture to others has the temerity to expose his ignorance in informing your

readers that he read so prominent a work as Root's "ABC and XYZ of Bee Culture" this year for the first time.

Again, we protest against our neighbour in the next county being raised to a dignity he himself would be the last to claim. Further, we would genially advise this novice to understand that declamation, insinuation, or innuendo, separately or in the mass, is not argument. We in the North know full well why "Delusions about Bees" were penned, and we do not greatly admire the motive. *We are not deluded!*—A VETERAN INVERNESS BEE-KEEPER.

BEE ASSOCIATIONS AND THEIR WORK.

[8663] I have read with interest the letters recently published in the JOURNAL from members of the Staffordshire Bee-keepers' Association, and as one of the "two chief officials" on whose "energy and tact the success of the Association depends," I should like to be allowed to state a few facts.

First, the Association is not defunct, or likely to become so, and it numbers over 200 paid-up members this year—the greatest on record.

Secondly, the loss on the County Show has been less recently than ever before, the loss last year being only £6 7s., whereas the lowest ever previously was £7 6s. 8d. This show is used as a means of educating bee-keepers in the county, and through it some of our most enthusiastic bee-keepers have been induced to start. All who know the working of the Association feel that it is money well spent.

The affairs of the Association are on a thoroughly firm financial basis, a good working balance of £7 being in hand from last year.

No funds of this Association are spent on the "more attractive work of teaching bee-keeping in schools." This is done entirely by the Staffordshire Education Committee, the only part we take being assisting by practical advice when asked. No official of the Association makes one penny out of the work of the Association, with the exception of the expert's salary of £40 per annum.

Thirdly, as to the visits of the expert. No one "has to write and ask for a visit." A ready printed and addressed post-card is sent to every member with the annual report, and all he has to do is sign it and put it in the post. This system was arranged several years ago, because there are so many experts in the county who would rather not be visited by another expert that it was felt the time of our official could be more profitably spent in visiting whenever required by those members with less knowledge of apiculture. Our expert has no two months' round—his services are at the disposal of members whenever and wherever required. Last year he visited 150 different apiaries, and inspected 870 stocks of bees, and in some cases where help was needed, three and even four visits were made.

Honey shows are organised at many of the Agricultural and Horticultural Shows in the county, and the services of an expert are always available for demonstrations at these shows. In addition, silver and bronze medals of the S.B.K. Association are given to those shows which affiliate with the Association and carry out the rules drawn up by our Committee.

The statement that in a certain village only one out of ten bee-keepers was a member was not made, as stated, by a member, but by myself as secretary on information received from the Secretary of the B.B.K.A., and in the interests of the suppression of foul brood I went on to remark, "Cases like this form a grand opportunity for a strong missionary effort on the part of the bee-keepers in the neighbourhood." I am glad to say the effort has been made by the one member, and two lantern lectures having been given by our expert in the district mentioned, six have become members and others are promised for next year.

Fourthly, as regards the Committee. Honestly speaking, the attendance at meetings is not all that could be desired, but what can one expect considering the large area covered. Some of these members are getting on in years, and have been stalwarts in the Association in years gone by, and if new blood is required surely the members at the annual general meeting should let it in, and not blame the officials for the laziness of the members.

I can assure your correspondents that the officials put in "plenty of energy"; the weakness lies in members who will write, but will not work to remedy the evils they see so plainly.

In conclusion let me ask "A Staffordshire Bee-keeper" to stand out boldly, like my friend Mr. Jacques, and give us his name, so that we may know who is dissatisfied with the work we are trying to do, and then we may be able to work hand in hand to effect the reforms, some of which the officials are all too conscious are needed in the Association. I can assure him no one is more anxious for the success of the S.B.K.A. than CLAUDE R. FORSE, Hon. Sec. and Treasurer S.B.K.A.

I was sorry to read a "Staffordshire Bee-keeper's" lament in "B.B.J." (page 26), as I knew the Association well in its most prosperous days when Mr. A. H. Heath was hon. secretary, and was ably assisted by the Rev. G. R. Bailey, the

expert, Mr. Rollins, together with the then energetic committee. The Association was worked up to about 180 members, and the subscription list alone totalled £70, besides profit from other things. If it is in danger of failing, I am very much put about, but in those days the Rev. Mr. Bailey and Mr. Rollins worked the expert's duties well, and nearly all the members, as well as others, were visited in spring and autumn. In fact, the work increased so much that two experts were necessary, and in one year over seventy days were spent in visiting. To my mind, the first downward move was made when the Association parted with Mr. Rollins, and in order to have an expert without any charge on the Association funds the Committee accepted the services of a horticulturist from the County Council (free), as the County Council did not then make any money grant, I believe. It was at this time also that they allowed the expert a seat on the Committee, which is very wrong, but I think he should be at hand to answer anything not clear. Now, however, that the Association has a grant in addition to the subscriptions, they ought to go on nicely.

Why not seek advice of those who used to work the Association so well, or, failing this, ask Mr. Rollins to again help in the expert work, for I know he is as keen on bees as ever, and goes long distances on his bicycle to assist others. He has now practically retired from business and has plenty of time on his hands, and I believe would be willing to assist in again lifting up the Association. I sign myself, AN OLD MEMBER, Wordsley, Staffs.

In reply to a "Staffs. Bee-keeper," in "B.B.J.," January 16th (page 26), I thank him for the information contained in his letter, much of which confirms my own observations and opinions, but at the same time I must call his attention to Rule 7 Staffs. B.K.A. annual report, in support of my previous contention, which reads as follows:—"That the Association shall employ an Expert, who shall be elected annually by the *Committee*."

Now, as I think we are agreed that there is a "fly in the ointment," if "Staffordshire Bee-keeper" will communicate with me direct, we can attempt to extract it.—E. JACQUES, The Apiary, Lichfield.

PROPOSED BEE-KEEPERS' SOCIETY FOR SHEFFIELD.

[8664] An attempt is being made in Sheffield to form a Bee Society. Will all bee-keepers in the district, whether favourable to the idea or not, please send their names to W. B. TALLENT, Post Office, Broomhall Street, Sheffield.

THE NYASA BEE.

By L. W. J. Deuss, Fort Johnson, Nyasaland.

(*Continued from page* 444, *Vol.* 40.)

The rainy season brings out the annual flowers very quickly, and they wither soon after the rains are over, but while in bloom give an abundant supply of honey of mild flavour, fair density, and dark colour.

The rains also bring out, right at their beginning, a large number of swarms, practically all with fertile queens. The explanation of this apparent anomaly may be that the preceding dearth of nectar has been local, or of short duration, too short to stop the swarming fever; or the explanations of the natives may not be quite unfounded: that the floods drive them out of holes in the earth, where they had improvidently taken up their domicile during the dry season.

These swarms provide the bee-keeper with an easy way of getting bees. Shortly before the commencement of the rains he fixes in trees near his own home or those of friends, empty boxes with a small entrance, and one side either screwed on loosely, tied with a rope, or fastened with hasp and staple, or any other way that will allow of easy opening without jarring. When any of these are occupied by swarms, he leaves them alone for a couple of days, to make sure that the queen has got fertilised, and then transfers them to his own hives in the usual way, preferably in the evening as soon as all the bees are at home. If it be necessary, they can be hived at the hottest part in the day by taking them into a cool room and performing the operation there. The evening is, however, preferable by far.

It is also a good policy to offer small presents to natives who will report the finding of a new swarm, 6d. to 1s., according to the size of the swarm. They must be warned, however, not to take the swarm, which they will do over night, killing large numbers of bees, and often the queen.

The bee-keeper goes and fetches them himself, or sends his native assistant for them. This person is of the greatest importance (more necessary than veil and smoker) and not easily got, as the qualities required for handling bees are very rare in natives. I am so fortunate as to have one, and I pay him 1s. per month extra (beyond his ordinary salary as house-boy) for helping with the bees, and he is quite satisfied. He generally works with the veil turned up as in the photograph in "B.B.J.," October 31st, thinking it will be time to let it down if the bees should get angry.

The feeding of swarms at this time of the year is hardly necessary, as there is plenty of nectar about, and sugar costs 4d. per pound. Besides, the feeder is

almost sure to attract ants, which worry the bees so much that they often desert the hive because of them. These little pests can be kept out by placing the legs of the hives in tins of native oil, castor oil, or ground nut oil, costing only 6d. per bottle. Ashes at the same time are often effective until the wind has blown the finer parts away. Water is useless, as the small ants, called Nyerere Bamba, will make a bridge with their bodies and walk over it.

Freshly hived swarms are rather prone to decamp anyhow, often without apparent cause. I found a strip of excluder zinc over the entrance a very efficient preventive, except in the case of casts, when a frame of brood from another hive has to be risked, (after preventing the access of ants, as said above) with the use of the feeder.

Swarms being obtained so easily it is not worth while to procure bees in any other way, except for special reasons. Thus I have driven bees out of trees in the town, because they attacked passers-by and were to have been sulphured had I not taken them.

Manipulation must be avoided as much as possible, as the smoker or carbolic cloth demoralises these native bees, and makes even strong colonies for several days unable to resist the ants, against which the usual precautions must not be omitted.

During the wet season the bees require no further assistance. Nature provides for their wants fully. Strong colonies soon rear drones and require supers and extra ventilation to prevent swarming. At the end of this period (about May) good swarms will have some surplus.

So far I have not succeeded in making the bees work in the section rack, which may be due to my ignorance, or perhaps to a special trait of theirs. But they have completed very fine sections in frames at the back of their brood-nest.

The cold season being one of comparative dearth of nectar, the bees are more apt to fight than at other times, and guard their alighting-boards jealously.

There being practically no rain during this period, a watering place, if not provided already, must be established close to the apiary without delay. Otherwise, the bees will go into house and kitchen of the owner and his neighbours, get drowned in pots and make themselves a nuisance to everybody. I found shallow native pots of earthenware the most satisfactory contrivance. They are filled with a water-weed called imbusi, which contains a sort of soda or saltpeter, and is greedily sucked by the bees when covered with water, even in the rainy season. They much prefer it to floats. The imbusi and the water are renewed every other day by the garden boy.

In the morning and evening a dessert-spoonful of wheat flour is spread on a tray near the watering place and eagerly taken to the hives. The price is 4d. per pound. I am convinced that it stimulates the bees to more activity so that they are stronger when the next season arrives.

The colonies, during the cold season, keep one or two combs with brood going. Drones there are none, or hardly any. This is the only period when queenlessness has been found without apparent reason.

The little honey that is gathered at this time is like that of the previous season, but denser.

In the warm season, there is no rain, but the warmth causes a considerable number of trees to bear flowers and new leaves, and spurs the bees to great activity. They soon rear drones and work very hard, specially in the mornings. They look after themselves.

The honey gathered from the trees is of a lighter colour than that from wild flowers, and is preferred to the latter by many persons. It also makes very pretty sections. Unfortunately, the warm season does not last long, and is soon followed by the one which, when prolonged, is really the worst.

In this hot season the trees have ceased flowering, and there is no food for the bees. The temperature goes up to 105 or even 110 in the shade. Any mistake that the bee-keeper may have made in the placing of his hives will now show itself. The bees will decamp when the last larvæ are hatched out, if the hive is getting too much sun, the afternoon sun especially being harmful. Shades of corrugated iron do not seem to be recognised by the bees any more than if the hives stood in the glaring sun. Of artificial shades, grass roofs or mats are certainly the best, but nothing can beat the shade of trees.

Owing to the dearth of nectar, the bees soon kill off their drones and become inactive. This year I have helped them over the hot season by sowing in September a lot of pumpkins and melons near the river. This, with a shorter duration of the hot season than usual has had a highly beneficial effect on them. They have all kept their drones, or at least some of them, I should say, as in a few cases I saw workers worry drones. And they are naturally in much better condition and ready for the first harvest of the wet season.

During the hot weather the hives should be overhauled, and if necessary, repaired and repainted, specially the roofs. This will avoid the annoyance felt by the bee-keeper to find, after a heavy shower, the thin quilt drenched, owing to the painted canvas on the roof not having been quite watertight.

(To be continued.)

[In calculating the number of drone cells per inch (see page 134, "B.B.J.," October 31st, 1912), Mr. Deuss writes us that he made a mistake. The number per inch should be 37.5 not 49.2, a considerable difference.—EDS.]

CAPTINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Burial in a Bee Garden (p. 10.).—One is naturally reminded of those charming lines by one of America's minor poets, which, if I remember aright, run thus:—

Oh! Bury Bartholomew out in the wood,
In a beautiful hole in the ground,
Where the bumble bees buzz, and the woodpecker sings,
And the straddle-bugs tumble around.

The Spiracles of the Honey-bee (p. 14).—In this connection I should like to raise a further question as to the number of the segments proper. The text-books speak of fourteen including the head. Now caterpillars of nearly allied insects, the lepidoptera have, or so I learned in my youthful entomological days, thirteen segments, of which the head forms the first. Ignoring the head, however, and to prevent confusion, accepting the numbering of the books followed by Colonel Walker, spiracles occur upon the first, and not upon the second and third, which, together go to form the thorax. By analogy one would expect to find only one pair of spiracles in the thorax of the honey-bee, and the petiole, or fourth segment would properly belong, with its spiracles, to the abdomen. But the question might very easily be referred back to the larva itself, for where they occur at this stage, they should be traceable later. The question I am raising is whether the thirteenth segment (fourteenth in my reckoning) should properly be so regarded. I should be grateful to Col. Walker for one of the proffered drones if they are not all mated or engaged. My own are not flying particularly well just now!

Strengthening for the Heather (p. 16).—I have tried this plan of Mr. Kidd's extensively, but from my experience I should say that it is not so simple as he appears to think, and that beginners would be in difficulties with it unless he advises also feeding before strengthening. Here there is usually a lull before the heather harvest, which makes such simple measures as he outlines risky in the extreme, and in any case uniting should not be done immediately before the bees are expected to gather. Mr. Rymer assures me that bees do no good for a week after uniting.

The Title of Master (p. 25).—I fail to see that Mr. Smallwood has strengthened his case. He asserts that "mastery" implies force, yet allows the term as an achievement of mind! Even here I disagree with him. The mastery of the sculptor, and so forth, is not only mastery of mind, which is essential, but mastery of technique; in other words, the control of craft detail. It is absurd to say that we do not use force to the bees. We do not beat them with sticks, but we certainly compel them, and they are "sapient" enough to be compelled so long as we keep them under control, and do not allow them to become our masters. Incidentally, Mr. Smallwood misquotes me, and proceeds from the misquotation. I did not write "fall out," as he will see by reference, but "fall foul of," which has quite a distinct intention.

Flight of Bees (p. 33).—Mr. Wilson asks for support, and I must be forgiven by the angelic authorities on flight, who have not trodden where he directs, if I rush in to help thrash out the question. I venture to agree with him, although not entirely, for a reason to be raised later, that the reduction in specific gravity does not help the bee, for the power required does not depend upon the specific gravity but upon the weight to be raised or propelled. It may, indeed, be affected adversely by the increase of bulk due to the reduction of the specific gravity. Thus, the usual spherical balloon has a much lower specific gravity than an aeroplane, but the power required to drive it through the air is greater for the same speed. It is apparent, therefore, that form is the dominant factor, weight for weight. No doubt the inflation of the tracheæ may enable the bee to maintain its altitude more easily (and deflation help descent), but that is principally due to the alteration of form, and affects upward as well as downward motion, whilst increasing sensitiveness to any current. This supposes that the inflating fluid is the same as the surrounding medium, when weight remains unaffected. But, and here is a point untouched by Mr. Wilson, the air in the tracheæ must be warmed, and this may give a slight lifting power, or, in other words, an actual diminution of weight.

Queries and Replies.

[8589] *Carniolan Bees.* — In the "British Bee-Keepers' Guide Book" I find Carniolan bees very highly spoken of; in fact, their only fault seems to lie in excessive swarming, which can be checked by giving larger hives and more air. Will you please let me know in next week's JOURNAL what size hive to make, and also the best way to ventilate such a hive?—L. HITCHMAN, Walthamstow.

REPLY.—The proper sized hive is one of ten frames, and ventilation can be carried out in the summer time by blocking up the brood-chambers of the hive all round by means of ½in. blocks. The natural propensity of foreign bees to swarm cannot be checked by making a large hive. We cannot add anything to the description of the Carniolian bee as given in the "Guide Book."

[8590] *Swarm-catchers. — Purchasing Swarms.*—You would greatly oblige me by replying to the following in the "B.B.J.": —A short time ago I read that you advised a reader to obtain a swarm-catcher, to prevent loss of swarms. Could you tell me the price of same and where one could be obtained, and do you think they are of any use. When is the best time to buy a swarm of bees, and what would be a fair price to pay?—A SCOTTISH READER.

REPLY.—Swarm-catchers should not be used except under exceptional circumstances, such as when an owner is away from home in the daytime, or if bees are kept in out-apiaries. The most efficient one is the "Brice," price 4s., which can be obtained from appliance manufacturers who advertise in our pages. You should purchase a swarm as early as possible in May. A fair price for one of 4lb. to 5lb. weight is 15s.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

J. T. (Cambridge).—*Honey Vinegar.*—The vinegar will be very good when it has properly matured.

F. S. J. F.—*Honey Sample.*—The honey is of good quality, and gathered mainly from clover.

Suspected Disease.

F. S. F. J. (Warmsworth).—We cannot find anything wrong with the bees sent. They were evidently chilled. The brown matter is merely the ordinary cleansing of the bees, which takes place on fine days, when they are able to fly.

H. R. (Marlborough), H. S. (Chislehurst), and A. W. (Birmingham).—The bees have died from "Isle of Wight" disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ¼*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

FOUR BUFF ORPINGTON COCKERELS, pedigree laying strain, 6s. 6d. each; advertisement.—L. S. CRAWSHAW, Norton, Malton, Yorks.

8 W.B.C.'s, with 3 lifts and rack to each, 4 new skeps, 4 feeders, excluders, 4-frame nucleus, 9 dozen section cases, super clearers, must sell, £5, or offer.—A. W. RIGLER, 22, Hill-street, Poole. v 77

FINEST LIGHT HONEY, in 28lb. tins, 8d. lb.; sample, 3d.—WAIN, Thorpe Bank, Wainfleet. v 74

LARGE, MODERN BEEHOUSE for sale, cheap; also Hives and Appliances used inside; inspection invited. Strong Wooden Building for sale, 16ft. by 8ft. inside measurement, suit farmer, cheap, £5.—J. CHAWNER, Desford, Leicester. v 72

WHAT OFFERS?—"B.B.J." since 1907, complete, or separately, Volumes 35 and 36, bound.—DAY, Penwall, Sheepy, Atherstone. v 73

7 DOZEN 1lb. JARS PURE CAMBRIDGESHIRE HONEY, light, 9s. per dozen; also four 28lb. tins, same quality, 58s. 6d. per cwt.; samples, 3d.; 1lb. jar, post free 1s. 1d.—R. THOMPSON, 42, James-street, Cambridge. v 75

TWO NEWLY-PAINTED BEEHIVES (Baldwin's design), good condition; also another Baldwin Hive stocked with bees; what offers, separately or collectively? inspection invited.—MISS E. POWELL, Heatherbank, Chislehurst, Kent. v 78

SPLENDID QUALITY LIGHT WILTSHIRE CLOVER HONEY, 60s. cwt.; sample, 3 stamps. —DAVIES, Apiary, Bagshot, Hungerford. v 76

1½CWT. LIGHT CLOVER HONEY, good flavour, 60s. cwt., free on rail; sample, 2d. —BARLOW, Beekeeper, Newcastle, Staffs. v 79

LARGE "WESTON" SOLAR WAX EXTRACTOR, never used, double walled, complete, 9s.—T. DOWNS, Hardwick Lodge, Wellingborough.

20 DOZEN JARS FINEST QUALITY HONEY, 9s. 6d. per dozen; orders booked for Swarms, May 3s., June 2s. 6d. per lb.—W. BUTLIN, Sunnyside Apiary, Hartwell, Northants. v 68

GRANULATED HONEY, good quality, 56s. per cwt., f.o.r.—J. PRATLEY, Burford, Oxon. v 58

HONEY, light, superior, 28lb. tins, 15s.; sample, 2d., cash with order.—BROOKS, Ashingdon Apiary, Rochford, Essex. v 56

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, 5th, and 7th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

CHAPMAN Honey Plants, to blossom 1913, dozen 2s. 6d., six 1s. 6d.; seed, 6d. and 1s.—JOHN P. PHILLIPS, Spetchley, Worcester. v 4

BUSINESS ADVERTISEMENTS.

FOR DRYING CLOTHES, Burtt's Ceiling Rack, delivered complete, from 4s. 9d.; list free.—BURTT, Gloucester. v 48

MESSRS. STONE and SONS, Chemists, Exeter, are buyers of English Beeswax, in large or small quantities.—Write, stating quantity and price required.

Editorial, Notices, &c.

BEE DISEASES BILL.

We regret to learn that owing to the congestion of business in Parliament, and consequently lack of time, the Government have decided not to proceed with the Bee Diseases Bill this session, but it will be re-introduced when Parliament meets again. When one realises the number of important Bills the Government have in hand at the close of this session, it is not surprising that time cannot be found for so small a measure as the one bee-keepers are asking for.

GLAMORGAN B.K.A.

The annual meeting of the above association was held at the Municipal Secondary Schools, Howard Gardens, Cardiff, on February 1st, when Major-General H. H. Lee, J.P., presided over a representative gathering of members.

The Chairman, in moving the adoption of the annual report, said he was pleased to see that the Association was doing useful work, and was in a sound financial condition. Mr. G. Kirkhouse Jenkins referred to the Bee Diseases Bill, and said he hoped to see the Bill soon passed into law. He also reported having attended a meeting at Carmarthen, convened for the purpose of considering the proposal for the formation of a separate department of Agriculture for Wales. The report was unanimously approved.

Votes of thanks were accorded to the retiring officers and committee, and the following were elected for the ensuing year:—President, Earl Plymouth. Secretary, Mr. W. J. Wiltshire. Treasurer, Mr. F. Gravil. Auditor, Mr. J. Jenkins, Committee, Rev. M. Evanson, B.Sc., Miss Benson, Messrs. G. Kirkhouse Jenkins, Tom Nicholls, D. Davies, W. Dyche, H. Skelding, E. Gibbon, Roberts, R. Thomas, and Whitehead.

On the proposition of Mr. G. Kirkhouse Jenkins the following resolution was passed: "That this meeting of the Glamorganshire Bee-keepers' Association hereby urges the Council of the B.B.K.A. to use every effort next session to introduce into Parliament a Bill similar to the Bee Diseases Bill now withdrawn."

The first-class certificates awarded by the B.B.K.A. to Messrs. W. O. Jones and David Davies, B.A., were presented by the Chairman, who warmly congratulated the candidates on their success.

Mr. W. Herrod (Secretary to the British B.K.A.) detailed the several examinations required by candidates to satisfy the Council of the B.B.K.A. before they were invited to the final test of lecturing before the council, and said the two candidates present were among the first on the list of successful ones.

Mr. Hedger Wallace reported that the County Council had promised to pay the expenses of the examinations of the third-class experts, and urged the necessity of reporting every individual case of disease, so that steps might be taken to deal with the matter.

Through the kindness of Mr. and Mrs. Dyche, tea was provided, and a hearty vote of thanks was accorded them for the pains they had taken to make the visitors comfortable.

Mr. W. Herrod gave a lecture on "Bee Diseases," illustrated with lantern views, and dealt fully with "Bee-diseases, and the best methods to adopt for the prevention and cure of them, and Enemies of Bees." Moths, birds, animals were dealt with, and several questions put by the members present were discussed and satisfactorily disposed of by the lecturer. A hearty vote of thanks was accorded to Mr. Herrod for the very able way in which he delivered the lecture.

At Llantrisant, January 31st, Mr. Meyler Thomas, Ynysplwm, in the chair, Mr. Herrod gave the same lecture, which was highly appreciated by a considerable number of bee-keepers in the district.—W. WILTSHIRE, Hon. Sec.

SOUTH OF SCOTLAND B.K.A.

PRESENTATION TO HON. SECRETARY.

The annual meeting of the South of Scotland Bee-keepers' Association was held on January 25th in Fountain Cafe Hotel, when Mr. Henry Marr, Halleaths Lodge, presided.

The financial statement was submitted, and showed that the patrons' subscriptions amounted to £10 6s. 6d., and the subscriptions of ordinary members to £7 7s. 6d. The Association finished the year with a balance in hand of £17 2s. 4d., being £1 2s. more than last year.

The Secretary (Mr. Q. Aird) submitted his annual report, which was also of a very satisfactory character. They had the services of a highly qualified expert for three weeks, and the reports showed that he gave general satisfaction. Despite the indifferent season it was gratifying that they had a good show with splendid exhibits. The reports were adopted.

Mr. H. Marr was re-elected president, and Mr. Ross and Mr. M'Donald vice-presidents. Mr. R. Johnstone, Mr. W. Ovens, Mr. Moir, and Mr. W. Mackie were appointed hon. vice-presidents. Some time ago Mr. Aird had announced his intention to retire from the secretaryship owing to his having left the district; and Mr. John Wilson, Noblehill, was elected

to the position. The following were elected members of committee: Messrs. R. Slater, J. Smith, K. Dobie, James Morton, jun., P. Dalziel, J. Halliday, P. Montgomery, Wm. Kerr, and Wm. Lockerbie. Mr. Aird and Mr. Marr were reappointed the Association's experts.

On the rules coming up for approval there was some discussion with regard to the sixth, which stipulates that all honey must be the product of the exhibitor's own apiary. Mr. M'Donald, Lochfoot, moved that the rule be cancelled, and said in view of the begging and borrowing that prevailed, they should make the show absolutely open for the best honey. Mr. P. Montgomery moved the previous question, and this was strongly supported by the Chairman, who said that he would be sorry to be connected with an association that did not show its own honey. The previous question was carried, only two voting for the motion. On the motion of Mr. Ross the rules were then approved of *en bloc*.

At the conclusion of the ordinary business the members presented Mr. Aird with a beautiful clock and a handsome silver water jug for Mrs. Aird. The clock bore the following inscription: "Presented to Mr. Q. Aird as a mark of esteem on his retiral from the post of secretary, by the South of Scotland Bee-keepers' Association, 1913."

The presentation of the clock was made by the President. He said the time had now arrived when they as an association must part with their secretary. He could safely say this parting was a matter of the deepest regret to everyone connected with the Association. Ten years ago their Association was in very low water, and Mr. Aird was induced at that time to become assistant-secretary with Mr. Johnstone. Mr. Johnstone afterwards retired on account of ill-health, and thereafter Mr. Aird had carried out the duties alone. For the past six years he had carried the work on with very great vigour, and instead of a debit balance of £30 ten years ago, they had now a credit balance of £17. It could not be wondered, in the light of these facts, that they were sorry to lose their secretary. Mr. Aird had raised the status of bee-keeping in the South of Scotland, and he was successful in inducing the Stewartry County Council to give a grant to the Association—the first grant from any County Council for such a purpose in Scotland. He thought that the example of the Stewartry County Council might be followed with great advantage by other County Councils. When it was known that Mr. Aird was resigning his position as secretary, the members felt that they could not allow him to go without recognising the great services which he had rendered to the Association. And not only did the members heartily contribute but in many cases sent expressions of regret that they were losing his efficient services, and also of appreciation of his courtesy and kindness in the past.

Mr. Aird thanked them for their handsome gift. He could not resign the position he had held without the sincerest feelings of regret, because he felt it was just like the breaking of another link in the chain that bound him to many good and true friends in the South of Scotland. He had been compelled to take this step by the increase of work at home and the distance he was now away from the centre of the Association's usefulness. He would ever retain the pleasantest recollections of his connection with the Association. The function terminated with a vote of thanks to Mr. Marr for presiding.—*Communicated.*

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

SUGGESTIONS FROM READERS.

How to Tell the Density of Honey.—The requests which have reached me to deal with this subject number six, which shows very clearly that the novice does not read quite as much about bee-keeping as he should. If I were to follow the method adopted by a contemporary, which answers 99 per cent. of the queries asked by advising the reader to buy a certain book which it publishes at a certain price, and see page No. so-and-so, wherein all the information asked for is given, I should save myself a lot of trouble, and rightly be accused of trying to push sales, which should be left to advertisement columns. But it is not every novice who can afford to purchase extra books, some cannot really spare all the time they should like to read, while to others a multiplication of literature is bewildering. For these reasons, although the matter is dealt with fully in "Producing, Preparing, Exhibiting Bee-Produce," I am very pleased to accede to the requests of my readers. Are not these articles designed to help the novice? and that end can be attained even by culling and repeating from books matter that to the experienced may be stale reading.

Many bee-keepers, even in this enlightened age, test density by inverting the jar in which the honey is contained, and watching the progress of the air-bubble; if it ascends very slowly they tell you the honey is of good density, while if its progress is rapid their decision is that the honey is thin. While admitting that to a certain degree density can be ascertained in this way, it is most unsatisfactory. Fill the jar right to the cap, and I defy anyone to get the air-bubble to rise quickly. The right method is to use a proper glass tasting rod, spoon, or silver

knife, dip it into the honey, and withdraw it quickly three or four times; in this way density is found by the sense of feeling. To find out how this works, different samples should be tested at the same time and comparisons made. By so doing in a very few minutes the practice will be learnt, and no difficulty will be experienced afterwards, even with a single sample.

How to Recognise Old Bees.—This can be studied best at the beginning of the year. Old bees very often have frayed wings, the body is somewhat shiny owing to the hair which gives it the fluffy appearance being rubbed off, leaving the chitinous covering (which is black) bare. In the early spring and late autumn, when robbing is most likely to occur, a number of almost black bees will be seen. Old writers erroneously supposed these were a different kind of bee in the hive. If one of these is caught and examined under a lens, it will be found that every particle of hair has been stripped from its body in the conflicts which it has had in entering and robbing other hives. These are the black sheep of the flock, and having once learnt to rob never afterwards gather nectar from the flowers, but seek to obtain their load in this discreditable manner.

How to Distinguish Between a Young and Old Queen, and How to Recognise a Virgin Queen.—An old queen is generally sluggish in her movements, the abdomen, instead of being long and slim, is bulky in shape, and the extreme tip trails instead of being carried quite clear of the surface over which she is travelling. Also, the abdomen becomes shiny through the hair being rubbed off by its constant insertion into and withdrawal from the cell in ovipositing. The wings of an old queen are often ragged through fighting rivals. A young queen is agile, slim in appearance, carries the abdomen clear, the latter has a downy appearance, and the wings are perfect. Comparison between a known old and a young queen will teach the novice to distinguish between them more quickly than any other method. An experienced bee-keeper can generally tell which is a virgin by her appearance; there is something which he has a difficulty in defining that tells him the queen is not a fertile one. It will be noted that the abdomen is shorter and more pointed, while it has not the same bulk as that of a fertile or laying queen. Virgins are also very shy and active; they also take wing on the slightest provocation. An unfertile queen is recognised by the brood in the hive, eggs, laid by her, although placed in worker-cells produce drones only. Failing this, the only sure method is by dissection and the microscope which will reveal the presence or absence of spermatozoa in the spermatheca.

THE NYASA BEE.

By L. W. J. Deuss, Fort Johnson, Nyasaland.

(*Continued from page* 58.)

I think that bees here have a far greater number of enemies than in Europe. Among the vertebrate there are first of all two large kinds of bee-eater birds, the green and the purple. Both very pretty indeed. At certain times they fly in swarms over the apiary, and swoop down on flying bees. Strange to say, they are Royal game, special permission of the Governor being required to shoot them, so I presume that they may have some other virtue besides eating bees.

Toads in the early morning lick up the bees, that return from the fields heavily laden, and fall to the ground before their hives. There are several varieties of lizard that will eat bees near the hives, but they do not get so many as the toads, owing to the hour of the day in which they are about. Both toads and lizards can only be got rid of by destroying them, and this small trouble is certainly worth while, especially if the compound is then walled in, and thus new ones are not so likely to obtain an entrance.

Of the insect family the *Philantes* not only carry away a lot of bees, but much annoy their keeper by doing it right from the alighting-board before his eyes. They also pounce on them on the wing. When the bees refuse to fly, as they do after noon generally, their enemy will take them while crawling at the entrance. You may catch or kill a few of these pests by hand, but it hardly seems to diminish their number. I have not yet tried Miss Sillar's plan of catching them, as given in the "B.B.J." of October 24th last, but I mean to do so. The *Philantes* are worst in the hot weather, and there are none in the cold season.

Spiders, centipedes, mantis, and a large yellow insect looking like a wasp, have also been seen to kill bees. I destroy the spiders near the apiary, and the others are so rare as not to matter much.

The wax-moth does not do much harm to the bees, but gives a lot of trouble to their keeper by destroying his spare combs, and unless I sulphur these once a week I am sure to lose them. In the hives they are dislodged and killed by the bees if they can get at them. Therefore, I do not use frames with saw-cuts, nor with holes for wiring, as I found these mostly occupied by the larvæ of the wax-moth.

The bee louse we also have got, but not many. On one of my best queens I found three or four, and once I saw one on a drone of a driven stock.

Honey "beetles," as I call them for want of their real name, live in two or three varieties, but all somewhat similar, under

the quilts above the frames outside the brood-nest. They are about $\frac{3}{16}$in. long, dark in colour, and move rather quickly. Their upper side is nearly the shape of a turtle, the bees cannot sting them, nor carry them away unless they open their wings. I do not know what they seek in the hives, but presume it is honey.

The most troublesome of all insects, however are the ants, as mentioned with reference to feeding with syrup, or giving combs of brood to swarms, and the only remedy is that which I have given. There are two kinds: the very small ant, so light as to be able to crawl over water, and a larger variety. Other varieties do not appear to infest bee-hives. Even the warrior ants, though they have passed near the apiary and scavenged the kitchen, leave the bees alone, so far as I have observed.

Among the bees' worst enemies I ought to mention their owner's inquisitiveness. Their good nature tempts him to pull the brood-nest to pieces without any necessity, instead of judging their condition from outside. Such interference results in a general laziness of the bees so ill-treated, and no honey.

I am not sure if I have observed any real disease, certainly I have not lost any stocks in this way. In the last cold season with a minimum temperature of 45deg. to 50deg., out of one or two hives a considerable number of dead bees were found on the alighting-boards early in the morning, and some before the hives. Also some bees were observed crawling out of the entrance very slowly dragging their hind legs as if they were lame. Perhaps the Editor or one of the readers can enlighten me.

NATIVE HIVE IN A TREE—VILLAGE IN BACKGROUND.

Many a swarm of bees, coming uninvited to friends of mine, has been destroyed by them because they think bee-keeping requires such a quantity of appliances, which take a long time to get from Europe, and cannot be got locally. This idea is, no doubt, created by some of the text-books and advertisements of accessories in bee papers, and excellent as many of them are, the belief in their absolute necessity is detrimental to the hobby in out-of-the-way countries like this. With the Editors' permission, I will describe the appliances with which I started.

The *hives* were made of paraffin cases,

as described in my previous letter, well dried in the sun to remove the odour. Nobody has any use for these cases, and they are given away to anyone who asks for them. The queen-excluder is made unnecessary by having the tops of the frames 1¼in. broad, and separated by tacks protruding $\frac{3}{16}$in. on opposite sides. These frames supply the natural wood roof, and leave little quilting for the bees to propolise or eat through. The small strip of excluder for keeping in newly-hived swarms is made of small laths of wood with a space of $\frac{3}{16}$in.

My first smoker was made by rolling a piece of tin from a packing case into the shape of a cone 8in. long, one opening being ½in., the other 3in. in diameter. Dry cow-dung was the fuel, and a hollow bamboo replaced the bellows, the air being blown through the bamboo by the mouth. Later I hardly ever used it, substituting for it a scent-sprayer, lent by a kind lady, filled with water. It is more efficient, and gives less trouble. For very vicious bees I use the carbolic cloth.

A feather of a big bird is very useful for brushing off the bees when necessary, or guiding them. But they sometimes resent being brushed. To clear a frame of bees, a mat of split reeds (Mpasa) is placed from the alighting-board to the ground. The frame is shaken over this. The first shake, strange to say, does not dislodge any, and the second practically all that have not put their heads into cells.

An ordinary match-box is a most valuable accessory in working with the queens. Half open, there is no better instrument to catch her majesty when on a comb. With a few workers she may thus be kept wrapped up in a woollen cloth for a day or two. She is also introduced with it to another stock by placing the match-box upon the frames interplacing a piece of wire gauze until the new colony gets friendly to her.

The veil is a necessity for the beginner, it is made of ordinary mosquito netting, dyed black with writing ink.

The feeder may be useful. Mine is a sweet bottle with screw-on tin cover. The holes are pierced in this, and the whole rests on a tin with a slot of obvious design between boards. I found this feeder useful to make a colony raise a queen during the dearth of nectar.

Foundation is of greatest help to the bee-keeper, but imported it is a prohibitive price, and as the local value of wax is only 1s. per pound, I simply baited my first frames with thin strips of clean wax in the middle, later on with starters of comb. I am getting a Rietsche foundation machine, cost about 20s. to 25s., and will mould the foundation myself in future. It is surprising that this appliance is not more used.

Thin wire for the foundation has to be bought, and so have sections, if one is clever enough to make the bees go into the rack. On the whole, the sections are hardly worth the trouble and disappointment they are apt to give beginners.

I have so far had no difficulty in selling my honey at 1s. per pound extracted, but think I could get 1s. 6d. if I asked for it.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

HIVE VENTILATION.

[8665] Now that many bee-keepers are overhauling their appliances and surplus hives in readiness for another season's work, while others may be building fresh hives for starting new, or extending present apiaries, I should like to suggest a modification in hive design, which, after two seasons' use, I have found very conducive to the comfort of colonies. This is the provision of a ventilator in the floor-board. In my own hives ("W.B.C.") I remove a 4in. square towards the back, so that the rear edge of the hole just comes inside the body-box, and cover the opening on the *underside* with perforated zinc. By removing the piece with a fine-toothed saw it may be still used to cut off the ventilation, when necessary, by simply dropping it into place, when the bees will speedily make it draught-proof. They do *not*, however, attempt to stop the holes in the zinc; on the contrary, when, in August, it becomes necessary to contract entrances on the commencement of robbing, the behaviour of the colony shows very plainly their appreciation of the extra ventilation, when these floor-board ventilators are opened up; indeed, but for them, most of my strong stocks would have spent the autumn of 1911 in idleness, hanging outside their unbearably hot homes, whose doors must of necessity be then almost closed against the ubiquitous wasp.

Surely, also, such extra ventilation should aid colonies in keeping up their stamina and disease-resisting powers; heat and stuffiness foster disease germs, as well as lowering vitality, and it seems to me the contraction of entrances in autumn, at the very time when the weather is generally most oppressive, must surely tend to bring colonies into a susceptible condition, a theory which the annual recrudescence of "Isle of Wight" disease a few weeks later, rather substantiates.—H. E. Scrope Viner.

"BLURTS FROM A SCRATCHY PEN."

[8666] Friend Crawshaw (page 37) is usually so absolutely accurate that when one does catch him *in flagrante delicto*, it is something to chuckle about. May I suggest that he reads the lines in italics preceding the remarks he takes exception to, which are in the identical words of Moses Rusden, and copied from his book now under my hand, at folio 81. May I repeat them: "Also a frame in the inside made fast with four pins for the bees to fasten their combs upon." As a few lines previously he says: "With a sliding shutter to run easily in a groove in the middle of the top," and again, "this shutter is to cover an hole 5in. square in the middle of the top of the hive," I cannot see how the word "frame" can be made to mean anything but a frame, especially as he inserts it into the hive "for the bees to fasten their combs to."

This is, perhaps too good an opportunity to be lost to review this old book. The binding is in calf, with "tooled" edges and centre (I have some old editions of "The Turkish Spy in Paris," of equal style). The wording of the title is quaint: "A full discovery of bees ('full' very small; 'bees' in type $\frac{5}{8}$in. high) treating of

The { Nature / Government / Generation / Preservation } of the Bee.

By Moses Rusden, an Apothecary; Bee-Master to the King's most excellent Majesty—Published by his Majesty's especial Command. Printed for Henry Million, Living in St. Paul's-chain, Stationer 1685." The dedication is to the King's Most Excellent Majesty, and, of course, is too long to reproduce, but one sentence is to us amusing. Speaking of the matter of the book, he thus delivers himself: "Yet it speaks knowingly and by experience of Kings and Chieftains of War and Peace—of Subjection of Government and Discipline, and shews how necessary they are in this commonwealth of the bees, whose whole being depend upon their Prince and common Parent." So even in those days the old Greek-Roman heresy survived.

But I am forgetting the frontispiece. The delineation of this interesting hive, its proportions and details can only adequately be expressed by quoting copiously from the text. Yet I ought not to proceed to this part without some allusion to this picture, and others with which he illustrates the book. Having dedicated the book to his Majesty at the top of frontispiece he has the Royal shield and crown, occupying almost one-third of the page. In the nature of supporters to this shield, he has drawing of two insects presumed to represent bees, but might be anything else that has wings. One is particularly struck with the prominence of their eyes, the length of their legs and their girded abdomens. But they are tongueless, and of weapons of defence they have none. Creeping up or inside the three octagon body-boxes (it is difficult to be certain) of which the hive is composed, are three more of these wonderful and fearfully-made creatures. The more slender is the topmost, and is decorated with a kingly crown carried on its antennæ, evidently the "Rex," the second is smaller in bulk, and is doubtless plebeian, while the third again expands, and must be the drone. As Latin was a living language in those days, and anyone who aspired to intellectuality affected to understand it, of course a Latin inscription on the pedestal, "Pro Autore Mose Rusden," was the correct thing.

So far, the frontispiece. Interleaved between pages 2 and 3 is another work of art. I presume it is meant to delineate a swarm of bees and of the "order and marshalling thereof." In all, there are twenty-four insects again headed by one crowned, but that there shall be no mistake this time, "Rex," is printed by its side. The main herd are smaller and labelled "Plebs," but on the right flank front are three rather bolder "bees?" entitled "Duces," *i.e.*, leaders. As there is a King, of course, there must be "Dukes." The rearguard is composed of three gigantic creatures still more dreadful as to the eyes, and these are the "fuci," or drones.

And the "King" is described as a "fair and stately Bee, having a majestic gait and aspect—his tongue is but half the length of a honey-bee, and his fangs are shorter than theirs." Rusden also adopts Pliny's description of the King: he has "a certain spot in their forehead in the shape of a crown." The description of the drones is but short—and horrible: "They have too moveable wreathed horns growing out together between their eyes." What a libel on the useful antennæ. His sketch of the worker bees' habits and customs are, on the whole, fairly correct.

My notes on these illustrations, I find, have extended somewhat beyond my original purpose. Perhaps if the Editor is willing, I may find in the text of the book something quaint and old, some ideas and fancies about bees which we have unlearned and forgotten. We see in these archives of the past something at which to smile, but it is not in ridicule. They were fond of their bees much as we are now. But they had not our opportunities. No! we reverence these old bee-keepers and these books browned with age, strange in their s's and f's, and whose

homely expressions sound uncouth and even coarse to modern ears, are just milestones showing how far we have since marched.—J. SMALLWOOD.

BEE-KEEPERS' ASSOCIATIONS AND THEIR WORK.

[8667] With the object of trying to remove some of the grievances which have been aired lately in your columns, on the work of the Staffs B.K.A., I have forwarded a request to the Hon. Secretary that Rule VII. be altered to read as follows:—

That the Association shall employ an expert who shall be elected by ballot each year at the Annual Meeting, from nominations made either in writing to the Secretary or by members present.

That the expert *must* visit *every* member in the spring and autumn.

That the expert must not be a member of the Committee.

That extra visits can only be obtained by arrangement with the expert and must be paid for by the member visited.

Although it was sent on February 1st giving twenty-one days' notice, Mr. Forse has replied that it is now too late to print this upon the agenda (the B.B.K.A. only require fourteen days' notice to print amendments on their agenda), but he has promised that it shall be brought forward at the Annual Meeting to be held at Stafford on the 22nd inst.

So that members may be able to give this matter their careful consideration and not have it sprung on them unsuspectingly, and be prepared to say Yes or No when the matter is brought forward, I shall esteem it a favour if you will kindly insert this letter in your columns. —JOSEPH PRICE, Haden Hill, Old Hill, Staffs.

MR. HEAP AND *NOSEMA APIS* (?)

A CHALLENGE.

[8668] Instead of striking out a definite line for himself, Mr. C. H. Heap (page 45) still quotes from the experience of others, who, like himself, have failed from lack of initiative, to cure bee-paralysis.

But why is my friend so sure that *Nosema apis* is the origin and cause of the so-called "Isle of Wight" disease? Parasites that may have nothing to do with the origin of certain diseases, often become more numerous when a subject is affected by some other serious malady; and in this case because of the presence of *nosema apis* these parasites have been described as the cause of paralysis.

It has been shown by careful investigation that *nosema apis* may exist in large numbers in the bees of a colony, and that they neither cause dysentery, paralysis, nor any other effect detrimental to the prosperity of the stock.

Instead of ascertaining for himself by direct experiment that the body of the *living* bee is peculiarly absorbent he leaves the subject and refers to dead bodies which, as everyone knows, become distended by the gases generated within. But surely he did not for one moment imagine I was proposing to treat bees already past recall. He will, however, find that the body of a bee dying under normal conditions will not absorb moisture to the same extent that the tissues of a living insect will do.

I did not state that the body of the bee could be saturated by the means of the air tubes; but as an example of the possibility of penetrating beyond the chitinous covering of the bee, I offered the fact which I have several times presented, that the spiracles and air-sacs are not impervious to moist air; and, of course, any volatile substance is freely admitted by the same means. The paralysed bee quickly recovers if held in the closed warm hand as directed.

With regard to the body and general organs of the bee, I have said nothing about using "solvents," as such application has not been contemplated, and would be undesirable; the object being to prevent further extension of the disease, to give tone and vigour to the system, and not by any means to destroy the organs of the bee by strong acids.

It is to be regretted that Mr. Heap did not carry out the very simple experiment I alluded to as to saturating the body of a living bee, as it would have saved him much labour in attempting to dispose of an accomplished fact by unsupported theories.

His "impermeable chitinous" armour plating not proving unassailable he now retreats behind some vague inner fortifications which are even less able to withstand active and common-sense bombardment; as I am prepared to show by practical demonstration under his own hand, as presently to be described.

But there are several points where it appears to me Mr. Heap has failed to grasp the situation as to the methods of ensuring permanent cures. For instance, he has already lost several stocks since autumn; and yet it is almost impossible for a stock to die out in winter from "Isle of Wight" disease, where it has been properly prepared by feeding up with an efficient remedy in the stored food. My friend also retains bees that readily fall before the malady, or so it appears to me in the absence of any definite information. Moreover, no bees should crawl out

of the entrance when a remedy is properly applied; and finally there is not the least reason why any queen should die because of the treatment I offer.

If Mr. Heap had given some explanation as to the extent of covering or quilting used, and the entrance space allowed during the mild season we have had, it might have been possible to account for the unexpected losses. Impervious or corroded quilts, and small entrances are always detrimental where there is any suspicion of paralysis.

I had a very severe experience with bee-paralysis when residing at Crawley in 1878, when the bees were lying about the ground as thick as hailstones before I realised what was the matter. I then took such precautions as enabled me to cure without the loss of a single stock; and though I have experienced nothing like it since, that knowledge has enabled me to help many applicants in recent years, and though Mr. Heap knows of no cures, and quotes from the statements of others who have been unable to treat the complaint successfully, I can offer many reports of permanent cures.

Although Mr. Heap professes to rely—and prides himself upon his reliance—upon the so-called scientific theories of failure rather than upon the science that has succeeded in demonstrating progressive facts I will here make him a very fair offer as the only way of convincing him that permanent and simple cures are possible. He shall have at least two profitable and populous stocks made from one that he would otherwise consider as condemned and useless.

He shall *cure*, under my instructions, any one of his own stocks that may show the first signs of the "Isle of Wight" malady from the month of May next, without me seeing the stock. I shall just rely on his own report as to general conditions, and he will be good enough to do exactly as I request.

I should wish him to do all in his power to provide against re-infection, as that is something over which I should have no control at this distance, although easily prevented were I at hand. For a similar reason (not being on the spot), I do not propose to start with a stock that may have been affected during winter and early spring, though I am quite willing to help in any such case.—Samuel Simmins.

EARLY POLLEN.

[8669] It may interest some of your readers to know that my bees were busy carrying in pollen for the first time yesterday (February 4th). To-day has been a glorious time, and the bees have been out in great numbers. We have had a very mild winter so far; all my stocks were given a cake of candy each, and some almost require another. I am glad to see the *Bee Diseases Bill* is before the House of Commons and has gone through its second reading, and trust it will not be long before it becomes one of the laws for England.—A. F. Knight, Truro.

CINEMATOGRAPH AND BEE-KEEPING.

[8670] In commenting upon the above (page 51), you remarked that the series was too short. As so many persons interested in bee-keeping who visited the London Opera House last Monday have made the same remark, I think I ought to offer an explanation.

On the night in question, when a little more than half through my lecture, the operator had occasion to stop the machine for a few seconds, when the electrician, thinking the picture was finished switched on the footlights; this being a signal for the band to play I had no alternative but to leave the stage.

Commencing on Monday, the 10th, my picture, "The Bee Hunter" will be shown.—J. C. Bee-Mason.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of January, 1913, was £2,886.—From a return furnished to the British Bee Journal by the Statistical Office, H.M. Customs.

W. B. CARR MEMORIAL FUND.

	£	s.	d.
Amount already acknowledged	12	11	6
Rev. F. S. F. Jannings	0	10	6
J. M. Best	0	1	6
A. E. S. D.	0	1	0
J. Reaveley	0	1	0
	£13	5	6

DEATH OF MR. C. L. NEAVE.

We regret to record the death on February 1st, at his residence, 88, High Street, Southall, of Mr. C. L. Neave, who since the year 1879 had been connected with the firm of Messrs. Abbott Bros., the well known bee-appliance manufacturers, where he held the position of head clerk. We extend the sympathy of "B.B.J." readers to Mr. Neave's family in their great bereavement, and to Messrs. Abbott Bros., in the loss of a valued and trusted member of their staff.

Queries and Replies.

[8591] *Transferring Bees.*—I have only one stock of bees, which are strong and healthy. On September 21st I drove the bees from a skep and tied the combs into frames with bass. Then I threw the bees out along with another driven lot on to the alighting-board of the new hive and they united successfully and have done well. I found out later they had gnawed the bass asunder and the combs had fallen down, some being glued together with the upright ones, so that I cannot move them at all. I have prepared another hive with a brood chamber above the lower one, and I thought I would fit the lower one up with full sheets of foundation and transfer all the frames and bees from the old hive and put them in the top brood box, which of course, rests on the top of the lower frames, then I thought the bees would draw out the foundation and the queen would go down to them. When this occurred I could take away the top (empty) frames, which are six in number, and remove the top brood box. It would then be an ordinary hive. Would this plan work, or do you advise anything else. What would be the best time for the work, now before the queen starts to lay, or later on?—BEGINNER.

REPLY.—As there are only six frames you had better work as follows. Wait until April, then on a fine day examine the combs and cut away all which do not contain brood. Push the remainder to one side of the hive and put in next to it a frame fitted with a full sheet of foundation, then the division board. When this is drawn out add another and so on gradually, until you get the brood chamber full. In doing this keep cutting off portions from the braced combs as the brood hatches out until the whole lot are removed. This will be much better than the plan you suggest. You must feed the bees at the time to help them.

[8592] *Using Stores from Diseased Hive.—Insuring an Apiary.*—When packing one of my colonies for winter, I found it very short of bees and that foul brood was in evidence, so I put "Apicure" into the hive, got the rapid feeder to work, and the bees filled five or six frames. On opening the hive a few days ago for the purpose of giving them candy, I found them all dead, and came to the conclusion they had succumbed to the cold, being such a small colony. I have not had time to examine the hive yet, but hope to do so in a few days. Should I still find signs of foul brood would it be wise to give the syrup to other bees, or destroy it together with all the frames?

As the annual fee for insurance will soon become due, it would be useful if you will define the exact area of an apiary; where it starts and finishes. I note the paragraph in the Insurance Policy, which reads as follows:—"Definition: By 'Apiary' is understood that portion of ground set apart for the accommodation of the bee-hives." In another part of the Policy it states: "The Policy is to indemnify the owners of bee-hives, insuring under the B.B.K.A. scheme, against their liability to third parties for damages to persons or property occasioned by bees from the insured apiary *outside such apiary.*"

The question arises where is the *outside* of the apiary? We will suppose a person has an orchard, say of five acres, and at the end he has five colonies of bees. Would the whole five acres come under the head of apiary? Will you kindly enlighten me as to how far the apiary boundary would extend from the hives?—S. KARM.

REPLY.—(1) Destroy all the stores in the infected hive. (2) This is a matter to be decided when necessary by the underwriters. Our opinion is that the whole five acres if owned by the bee-keeper constitutes the apiary, unless the special part where the hives stand is properly fenced in to protect them from trespassers and molestation of any kind.

[8593] *Feeding Bees in Skep.*—I shall be glad of a reply to the questions below in this week's BEE JOURNAL. I bought a swarm of bees in a skep last May. How can I find out if the bees have sufficient stores to carry them through the winter, or is there any way I could feed them. I intend to transfer them to a frame-hive in the spring, by the method advised in the "Guide" Book.—F. M., Minehead.

REPLY.—The only way you can judge at all of the food supply is by the weight of the skep, and this is unsatisfactory. Avoid risk of starvation by putting on a cake of candy. There should be a hole in the top of the skep for the purpose of feeding, but if there is none you must cut one out.

BEE DISEASE IN SCOTLAND.

In the House of Commons on February 4th, the Marquis of Tullibardine asked the Secretary for Scotland—If he is aware that the Scottish bee-keepers are manifesting concern at the delay in passing a measure dealing with bee disease; whether he is aware that the Highlands of Scotland are quickly being denuded of bees; and when does he propose to deal with the matter.

Mr. McKinnon Wood said that no recent representations on the subject had reache him, but he understood that Scotch bee-keepers were anxious to obtain powers to deal with the disease. No evidence had been brought before him to show that the Highlands were being denuded of bees. As regarded the last part of the question, he was in communication with the President of the Board of Agriculture.—*Vide Press*, Feb. 5th.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

January, 1913.

Rainfall, 5·59 in.	Minimum on grass, 20 on 13th.
Above average, 3·03in.	Frosty nights, 11.
Heaviest fall, ·91 on 11th.	Mean maximum, 46·8.
Rain fell on 21 days.	Mean minimum, 37·0.
Sunshine, 33·7 hrs.	Mean temperature, 41·9.
Below aver., 33·2 hrs.	Above average, 4·2.
Brightest day, 26th, 5·1 hrs.	Maximum barometer, 30·280 on 26th.
Sunless days, 13.	Minimum barometer, 29·172 on 20th.
Maximum temperature, 51 on 30th.	
Minimum temperature, 26 on 13th.	L. B. Birkett.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

W. Y. Z. (Notts).—*Stock Found Dead in Well-stored Hive.*—(1) The bees have died from "Isle of Wight" disease. (2) Do not use the food elsewhere; burn it. (3) Ordinary British bees. (4) The sample of honey is good and certainly worth showing. You have not complied with our rules in omitting to send full name and address. Please do this in future, or we cannot answer your queries.

Suspected Disease.

J. P. (Woodstock).—There is no disease in comb.

W. B. T. (Oxford), D. A. (Lancashire), and AN OLD READER (Surrey).—Bees have died from "Isle of Wight" disease.

W. J. F. (Perths.).—The comb is affected with foul brood.

G. F. S. (Loughboro').—We regret to say that the bees are badly affected with "Isle of Wight" disease. Destroy the stock at once and burn all combs, dead bees, quilts, &c., and disinfect the hive by scorching with a painter's blow-lamp.

E. C. (South Devon).—The bees have died from starvation. They are ordinary British bees.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ¼in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

NINE ACRES GOOD LAND, Bungalow, every convenience, orchard, pigsties, freehold.—TRESAISON Hockley, Essex. v 83

1000 CLEAN, well filled and sealed, 16oz. and over, Sections Clover Honey for sale. Deposit. Expert packing.—H. C. GIBSON, Ulster Apiaries, Ballygowan, Belfast. v 88

PURE WELSH HONEY, granulated, six dozen, in 1lb. screw cap jars, 10s. dozen.—T. JAMES, Brynafon, New Castle Emlyn. v 89

WANTED, secondhand cog geared Extractor. Deposit.—PACKE, Rothley, Leicester. v 84

HIVE, complete, Taylor's 5a, containing grand stock of Bees, well wintered, on nine frames, one super, ten shallow frames, one W.B.C. super sections, grand hive for beginner, absolutely no disease, £2.—GREGSON, Ashton-street, Lytham. v 81

1½ CWT. LIGHT CLOVER HONEY, 60s.—A. J. NOYES, Pewsey, Wilts. v 85

1½ CWT. FINEST FRUIT BLOSSOM HONEY, 60s. cwt., cash with order.—BLACKBOURN, Minster, Thanet. v 87

GRANULATED HONEY, 28lb. tins, 15s.; sample, 2d.—MILLIS, Hill's-lane, Ely, Cambs. v 86

LIMNANTHES PLANTS, large bundle, 1s.; six tin feeders, 2s. 6d.—BOWEN, Coronation-rd, Cheltenham. v 80

SUFFOLK HONEY, medium colour, fine flavour, screw cap glasses, 7s. 6d.; rather dark ditto, 7s.; three dozen, carriage paid, cash.—WRIGHT, Beekeeper, Sudbury. v 82

FOUR BUFF ORPINGTON COCKERELS pedigree laying strain, 6s. 6d. each.—L. S. CRAWSHAW Norton, Malton, Yorks.

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, 5th, and 7th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD. "B.B.J." Office, 23, Bedford-street, W.C.

CHAPMAN Honey Plants, to blossom 1913, dozen 2s. 6d., six 1s. 6d.; seed, 6d. and 1s.—JOHN P. PHILLIPS, Spetchley, Worcester. v 4

BUSINESS ADVERTISEMENTS.

MESSRS. STONE and SONS, Chemists, Exeter, are buyers of English Beeswax, in large or small quantities.—Write, stating quantity and price required.

Editorial, Notices, &c.

SOMERSET B.K.A.

ANNUAL MEETING.

The annual general meeting of the Somerset Bee-keepers' Association was held at Yatton on Saturday, February 8th, when Mr. T. W. Cowan, F.L.S., F.R.M.S., F.G.S., presided over a large and representative gathering of members. The Hon. Secretary, in presenting his report and balance sheet, mentioned that in spite of the poor honey season in 1912—one of the worst ever experienced in the county—the Association showed a slight increase in paying members. £86 6s. 5d. had been received in subscriptions and donations, out of which £49 18s. 10d. had been paid in fees to the visiting experts, and £15 4s. 6d. in prizes; and there was a balance in hand of £7 18s. 1d. The Association experts had during the past year paid 778 visits and inspected about 1,900 hives, only ninety-one of which were reported to be suffering from foul brood; this disease is still prevalent in many parts of the county, amongst bee-keepers who are not members of the Association, which shows the urgent need for legislation. The "Isle of Wight" disease had appeared in several districts during 1912, but in most cases the experts had been given a free hand, and each affected stock was destroyed, the hives and surrounding ground being thoroughly disinfected.

The Chairman having favourably commented upon the report and balance-sheet, they were unanimously adopted. Mr. T. W. Cowan then presented the medals and certificates won by the members during the year. The Challenge Honey Pot, presented by Colonel H. F. Jolly, was won by G. W. Kirby, who also gained the B.B.K.A. silver medal.

The following gentlemen were presented with the third-class expert's certificate:—J. Hutchieson, J. Coombes, E. J. Harvey, B. Gage, and E. Westcott.

Lady Smyth was re-elected President of the Association, and all the vice-presidents and members of the Council were unanimously re-elected, with the addition of Mr. J. Hutchieson. Mr. L. Bigg-Wither was appointed hon. secretary and treasurer, and Mr. E. Walker, assistant secretary.

Upon the proposal of Mr. T. W. Cowan, the following resolution was unanimously approved:—"The members of the Somersetshire Bee-keepers' Association regret that through want of time the Bee Diseases Bill has been withdrawn, and urge upon the President of the Board of Agriculture and Fisheries the necessity of re-introducing and passing it early next session."

After the meeting, a most interesting and instructive lecture on Bee Diseases was given by Mr. W. Herrod, F.E.S., which was greatly appreciated by all present.—L. Bigg-Wither, Hon. Sec.

DEVON B.K.A.

ANNUAL MEETING.

The Mayor of Exeter (Mr. H. W. Michelmore) presided at the annual meeting of the Devon Beekeepers' Association in the Guildhall, Exeter, on January 31st.

The annual report stated that the number of members was 300, as against 277 last year, showing that in spite of a bad honey season greater interest was being taken in the craft.

The accounts showed a small balance on the right side, but it was evident that if the Association is to be progressive increased funds were necessary. To enable the Association to be yet more effective it was most desirable that members should increase their subscriptions where possible. An increased number of hives had come under the benefits of the Insurance scheme this year, viz., 754 hives. After the record season of last year it was but natural that the demand for labels should be less, the number sold being 2,825. The Council regretted the appearance of the "Isle of Wight" disease in the County during the past year, and requested an earnest perusal of the leaflet issued by the Board of Agriculture, in order that the symptoms would be noted and dealt with at once. As yet it seemed to be in isolated spots, comparatively few in number; but none the less they needed to be on the alert.

Lieut.-Colonel Walker, in moving the adoption of the report, said it was not fair when it stated that they had experienced a bad season. Their members, he was sure, had profitably disposed of a favourable harvest. The monetary, fascinating and moral advantages of bee-keeping were being more recognised. Mr. F. E. Smith seconded. The report was adopted.

The Rev. G. Grylls moved a vote of thanks to the retiring members of the Council and officers, Mr. Morris seconding.

Mr. F. E. Smith proposed, Mr. McCullah seconded, a vote of thanks to the Devon members of Parliament for their support to the Bees Diseases Bill, which has been brought forward in the House of Commons.—This was carried.

Messrs. Scholefield and Furse were elected as delegates to the B.B.K. Association, and officers were re-elected, votes of thanks ending the meeting.

After the meeting a cinematograph exhibition was given in the Franklin Hall. The pictures showed all the changes that took place in the interior of the hive

from the laying of the egg to the emerging of the full-grown bee. Views were also given of the work on a bee farm in actual operation.—*Communicated.*

AMONG THE BEES.

By D. M. Macdonald, Banff.

BEE-KEEPING IN SCHOOLS.

About a dozen years ago bee-keeping was first introduced to the school curriculum under the head of Nature Knowledge. Dealt with at first hand it makes a fascinating study for children; and when treated in the form of Bee Talks, every ear is open, every face alert and beaming, showing that every little brain is ready to retain the impression fixedly. Comb-building makes an excellent theme, and illustrations are ever at hand of this wonderful piece of construction in every stage up to completion. From Egg to Perfect Insect produces wonderful animation. An empty cell is shown, then one containing an egg, and others with larvæ in every stage of development; all are seen, from larvæ just hatched to pupæ wreathed in their silky shrouds, on to the imago eating its way out of the cell, or just emerging. An interesting companion picture is a ripe queen-cell, which can be cut carefully open to assist the royal virgin to make her exit. No pictures of these processes can match the reality. At honey-taking time scraps of comb are always at hand to serve better than any picture, or even word-picture, to show what honey is, how it is stored, where it is obtained, and what is its use and function. Every branch of the subject can be thus dealt with, and every country schoolmaster who keeps bees can teach to his budding crofters, cottars, small farmers, or tradesmen, a future means of making money, and an added joy to life. Later, the subject of apiculture received a special niche of its own in the school curriculum, until it gradually, by its own inherent merit secured a firm place in many a rural and urban school. Even Higher Grade Schools now treat it as a science subject, and wherever it finds sympathetic treatment, no other proves more fascinating to the young of both sexes. Realising the value of seeing the actual thing, our Board of Agriculture for some time has been supplying observatory hives to schools where a claim is forwarded by a School Board with a teacher ready to take the subject up actively. Quite a number of these are now on exhibition in schools. Particularly where there is a school garden, bees should always form part of the equipment. It is a peculiar fact that, where these are kept, my own observation, as well as information given me by other teachers, convincingly proves that stings are rare—some say almost unknown—even when no veils are worn! More teachers might take advantage of the liberal offer of the Board of Agriculture, and obtain these observatory hives. I have seen on several occasions about 1,000 school children visiting flower and honey shows, and the pleasure so markedly exhibited on every face was a delight to see. The flowers, &c., were looked at and passed hurriedly by; it was difficult to drag them from the honey exhibits, and more particularly from the observatory hives!

The latest recognition of bee-keeping is the new model apiary in the Zoological Gardens, London, carried on under the auspices of the British Bee-keepers Association; for which £350 has been granted by the Government under the Development Fund Grant. Courses of instruction in bee-keeping are held there with practical demonstrations by the Association's chief expert, Mr. Wm. Herrod. Scotland must next claim such an experimental apiary in Edinburgh, and it is no secret that some in authority are favourably disposed in this direction.

The Monthly Record.—It does not seem to be sufficiently well known that, in addition to this, our weekly, there is a monthly bee newspaper, *The Bee-keepers' Record*, issued from the same office at a cheaper rate, for the benefit of cottager bee-keepers and apiarists of slender means. It is not a mere copy or reprint of the JOURNAL, but contains almost all original matter. It gives particular attention to Association news; reports all annual meetings; gives the prize-list of the leading shows, and prints a list of Associations, giving the names and addresses of the Secretaries, and, in the season, publishes a list of "Shows to Come." Every month it contains a most useful "Work for the Month" page, especially written by the Editor, which itself, for the beginner, is frequently worth the 2d. paid for the paper. Associations receive this publication at a reduced rate.

In the January issue a new feature has been inaugurated in the shape of a department, "Bee-keeping for Women," conducted by a woman. Judging by the contents of the first two numbers, it promises to be interesting and instructive. Many women are prominent members of bee-craft; indeed, it is a pursuit in which women should excel, as I have more than once pointed out in the past. This is no new thing. Lawson, about 300 years ago, wrote that the woman was often the "bee-man" of the family, and he gives a vivid and lively description of how the housewife and her daughters carried out the "taking down" of their bees, while he emphatically declares, "I will not account her any of my good housewives who wanteth either bees or skilfulness in dealing with them."

I had last summer the pleasure of passing a lady, all the way from South Africa, for her third-class expert certificate, and she carried out the various manipulations deftly and neatly, while she answered all questions promptly and lucidly. Later, I had an opportunity of comparing the work done for a higher examination, and several of the ladies did themselves and the craft full credit. Judging at a leading county show in England, I admired greatly the neatness of a lady exhibitor in staging her all but perfect sections, and her model trophy. The same exhibitor, I was glad to see, took a leading position later at the principal London show, as, indeed, she has done for years, and of our lady bee-keepers she does not stand alone as a prominent exhibitor. Ladies with first-class expert certificates fill very responsible positions in Government apiaries in New Zealand and South Africa. Miss Wilson, of the *American Bee Journal* is a noted writer of bee-literature. *Gleanings* and the *Canadian B.J.* each have, or had, a Women's Department. All of us will wish the *Record's* new venture every success.

MRS. A. N. WENT'S APIARY, RIVERSIDE, ST ASYTH, COLCHESTER.

HOMES OF THE HONEY BEE.

APIARIES OF OUR READERS.

Mrs. A. N. Went, whose apiary we illustrate this week, writes such a business-like and interesting account of her bee-work that we can add nothing to improve it. We are not surprised at the bees being a success in such capable hands as hers, and we hope her example will encourage timid lady bee-keepers to determine to manage their bees themselves as she did. It is the only way to foster a love of the craft, and no real bee-lover is ever a failure as a bee-keeper. Mrs. Went says:—

"I bought my first stock, in a home-made frame hive, in 1894, from an old bee-keeper in the village, and for the first year he managed it for me. Taking off the first sections gave us an exciting afternoon. I may say we retired to the house and shut all the windows while he took them out one by one, using clouds of smoke. I was not content to manage in this way for long, and when I heard of the Bee-keepers' Association I promptly joined it and took in the Bee Journal. In this way, with the help of the Association expert I learned to manage my bees myself, though I am glad to have the help of a 'mere man' to lift and carry supers weighing 30lb. to 40lb. Stings used to trouble me a great deal, but now they hardly affect me at all.

I have never bought another stock, but increased my apiary by degrees, and though I have sold many swarms, I have now seventeen strong stocks. For several years my apiary remained free from disease, but one spring about ten years ago there was a bad outbreak of foul-brood in the district, and several of my stocks were affected, but by careful watching and prompt treatment, I have eradicated it; I have not seen any for two years. 'Isle of Wight' disease has not come this way, but last spring I transferred all my stocks into clean hives, after treating these with Ayles' Cure, as a precaution.

This is a good honey district, willow

palm, clover, hawthorn, lime, blackberry, and sea lavender provide a good harvest from April till September, when weather permits the gathering. I have always averaged about 40lb. a hive, but in 1911 I took 1,800lb. from fourteen stocks, and left them all well provided for winter. Last year was not so good, I had only 600lb. surplus, and had to feed them for winter. I find the large cakes of candy I gave in October are all eaten, and will need renewing at once. My hives are full of bees—the mild winter has made them breed early—so with attention to food supply I am hoping for a good season in 1913. I find the JOURNAL more interesting every year, and always look forward to it.

I work chiefly for extracted honey, frequently giving four supers to strong stocks; I used to have a difficulty in getting them cleared when removing the honey, but have adopted the open-air plan, and find it answers well. I put the wet racks of combs on a large barrow and take them on to the meadow, about 4 p.m., and by dark they are quite clean. I then remove them to a barn and early next morning tie each super up in two large sheets of brown paper. These are then hung on a beam ready for next season's work. The bees forage round a bit in the morning, but finding nothing, soon settle down."

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE SPIRACLES OF THE HONEY-BEE.

[8671] Referring to Mr. Crawshaw's note page 59, "B.B.J.," 6th inst., and for the benefit of such readers as have not access to the writings of Professor Zander and Mr. Snodgrass, I will endeavour to explain the outer segmental development of the larva of the honey-bee.

In both sexes the body of the larva, exclusive of the head, is covered by thirteen completely visible chitinous segments, each of which, except the third, twelfth, and thirteenth, bears a pair of spiracles.

It is a general rule with insects that the first three larval segments form the thorax. In the development of *Apis mellifica*, the fourth segment bearing the petiole is joined on to these, raising the number of pairs of spiracles in the apparent thorax to three, which leaves nine abdominal segments bearing between them seven pairs of spiracles to be accounted for.

These segments, when complete in the perfect insect, are chitinous rings consisting of a back-plate (*tergum*) and a belly-plate (*sternum*). In the drone the first six rings and their spiracles are completely visible. The tergum of the seventh, bearing the last spiracles, is visible; the sternum is concealed. The eighth and ninth segments are much modified. The former carries the generative organ, the latter forms the anal tube.

In the queen and worker, the first six spiracle-bearing rings are also completely visible. The seventh and eighth rings, being drawn inwards to form the sting-chamber and stinging apparatus, are not externally visible. This is more easily understood when we recollect that the sting is, in reality, an external appendage. The seventh tergum carries the last pair of spiracles. The ninth segment ring, as in the case of the drone, forms the anal tube.

All the segments with which we started are now accounted for. In the larvæ of both sexes their number is identical, and in the perfect insect it remains the same, although, owing to structural developments an observer might well be led to conclude otherwise. It is the same also with the spiracles. From first to last, and in drone, queen, and worker there are ten pairs of them.—H. J. O. WALKER, (Lieut.-Col.).

REMINISCENCES OF A COTSWOLD BEE-KEEPER.

[8672] What delightful and instructive evenings can be spent reading over back numbers of the "B.B.J." A friend recently gave me a bundle, and in looking them through I was much interested in the chatty "Notes" written by Mr. J. C. Calvert, under the *nom de plume* of "Amateur," Cheltenham, in 1906, whom I know well, but who now, alas, has gone to his last rest.

They bring to my mind many of the pleasant days we had together among the bees. How he loved to roam the breezy Cotswold hills, and have a chat and cup of tea with the skeppists in those quaint and old-world villages. It was "Amateur" who first aroused my interest in bees and bee-keeping, and though signing himself thus, he was in reality an experienced apiarist, having had bees for twenty years before coming to reside in the "Garden Town."

The son of a gentleman farmer he commenced bee-keeping quite early with a skep, which later threw off a swarm and a cast, and smart modern frame hives were then adopted. This small

apiary increased until it numbered seventy-five colonies, yielding in 1892 an average of 50lbs. per hive. "Amateur" thought this such a pleasant way of making money that he increased by buying thirty-four skeps.

Foul brood, however, broke out among them and rapidly spread, and being much more dreaded then than now, many infected colonies were destroyed, and at the end of three years only five stocks remained.

Barrow loads of rotten combs, frames, and quilts were wheeled to the fire-box of a threshing machine, and there consumed. This calamity so disheartened him that he gave up bee-keeping for a time, but his interest soon revived, and another apiary was soon built up. His swarming experiences were as varied as they were numerous. On one occasion on coming from church "Amateur" noticed a departing swarm in the air. This was irresistible, and he immediately gave chase, over ploughed fields, until the bees, evidently tired of their escapade, settled quietly in a friendly bush, and were successfully hived in their pursuer's silk hat. Of late years he went into the bee business more extensively, and operated with a friend some 200 colonies in out-apiaries on the Cotswolds, in Oxfordshire and Herefordshire. The power of endurance he possessed was astonishing, for after cycling ten to fifteen miles uphill he would put in a long day's work amongst the bees, and, if occasion arose, could work all night. This often happened when moving an apiary, or at extracting time, and no labour was ever too great when bees were concerned. Of all operations connected with bee-keeping on a large scale he found that of moving hives the most trying; especially forced moves, when they were full of both bees and honey. On one occasion he hauled two lorry loads with a traction engine, to another location some fourteen miles away, at night, and on arrival it was found impossible to draw them into the field. "Amateur," however, quickly rose to the occasion, and knocked up a neighbouring carter who, with his team, came to their rescue.

He was a lover of nature and of sport. At fifteen he rode a winning mount at the Hunt Steeplechase, and was an ardent fox-hunter, and an excellent shot. He delighted to wander through the coverts with a gun on summer evenings, and few bullets there were that did not find their billets in the rabbits as they scampered hastily to their holes.

Under the *nom de plume* of "Amateur Expert," he wrote much on bees to the county papers, and was frequently asked to place his twenty-eight years of bee-keeping and other experiences in book form, and had he done so it would have formed a unique record of an observant and methodical life.—An Admirer, Cheltenham.

"ISLE OF WIGHT" DISEASE "CURES."

[8673] Mr. Samuel Simmins raises a very pretty mist in his last communication, but I hope readers of the "B.B.J." will be able to see through it, and will concentrate their attention on the point at issue, which still remains unanswered, namely, how does a germicide, applied to the impermeable chitinous covering of a bee reach the spores of *nosema apis* which are found in the walls of the second stomach and intestines? Instead of telling us precisely how this germicide does the work, Mr. Simmins makes vague assertions, introduces side issues, and finally challenges me to make an experiment that would not carry the controversy a step nearer a satisfactory issue.

The mere repetition of an assertion does not establish its truth. What we want from Mr. Simmins, in the interests of apiculture, are plain matter-of-fact details, to enable us to estimate the value of what he says. Some of his statements —and those to which, apparently, he attaches great importance— border on the grotesque. Here is one. "He (Mr. Heap) will find that the body of a bee dying under normal conditions will not absorb moisture to the same extent as the tissues of a living bee will do." I must leave the dead bee, because I cannot tell whether the bee Mr. Simmins had in mind when writing had been dead a minute or a month, and will come to the living bee. A living animal body requires, to maintain its existence, a definite amount of water, which may vary in different individuals, and this definite amount of water may not be increased without danger to life. Nature, therefore, provides insects, as well as mammals, with waterproof coverings, so that all the moisture that reaches the tissues in various parts of the body must do so through the medium of the alimentary tracts. The only other way in which water may enter an animal body is by means of the breathing apparatus, but asphyxiation must then be the result.

Mr. Simmins says truly enough that a volatile substance may pass through the spiracles to the air-sacs; but let us remember such volatile substances if inhaled in sufficient strength, soon end the life of the bee. The volatization of sulphur within the hive provides us with a familiar illustration. The volatilable elements in the germicide in question are not so powerful as sulphur fumes, and yet we know that sulphur fumes are

powerless to destroy the spores of foul brood. So far no evidence has been produced to show that the spores of *nosema apis* are less tenacious of life than those of foul brood; but Mr. Simmins seems to want us to believe that the fumes of his germicide which can only reach the spores in the walls of the intestines, if they are reached at all, in infinitely small volume, through the most minute trachæ, are capable of destroying these spores. If my surmise of Mr. Simmins' intention be correct, I can only say he carries no conviction to my mind. He evidently feels the weakness of his position in this respect, for I find further in his letter the following remark: "It is almost impossible for a stock to die out in winter from 'Isle of Wight' disease, where it has been properly prepared by feeding upon an efficient remedy as the stored food." Here again we find Mr. Simmins in doubt, as denoted by the word "almost" in the first clause of the sentence. The point needs labouring no further.

What I have written has been in the assumption that *nosema apis* is the cause of "Isle of Wight" disease or, as Mr. Simmins erroneously terms the disease, "infectious paralysis"; but if the disease is not caused by *nosema apis*, as Mr. Simmins implies, he ought to tell us what specific bacterium or protozoa does produce the disease.

Finally, Mr. Simmins, a second time, invites me to prove what so far he has failed to demonstrate. I am under his instructions to go to the trouble of "curing" a stock to show that he is right. I appreciate Mr. Simmins's trust in my good faith, but I cannot accept the challenge, because it is impracticable for me to do so in the first place, and unnecessary in the second. The experiment would have little or no value. The stock selected is to be one that may show the first signs of "Isle of Wight" malady from the month of May next. The time suggested is admirably chosen, for a stock slightly affected with the disease which is able to survive until June, is very likely, with or without treatment, to appear about mid-summer to have recovered. I should not, however, consider a stock cured unless it were living a year or longer, after the first symptoms were manifest. It is a mistake to suppose, as some do, that a stock will die within a few weeks of the outbreak being noticed. I have said that the experiment is unnecessary, and for this reason, that in the last paragraph of his letter, Mr. Simmins gives the whole of his case away. Still writing respecting the challenge, he says: "I should wish him to do all in his power to provide against re-infection, as that is something over which I should have no control at his distance, although easily prevented were I at hand." Of course the robbing propensities of bees would be kept in subjection were he at hand; but what does re-infection matter seeing that it is so easily cured? A little "recuperative vitality" upon which Mr. Simmins sets so much store, or giving "tone to the system," should be quite sufficient to prevent so dire a calamity as re-infection. Once more, he says, "I do not propose to start with a stock that may have been affected during winter and early spring." Surely the germicide which is of a "peculiarly absorbent nature" and "recuperative vitality" should together overcome all obstacles. If the "efficient remedy" will work so well on the first appearance of the malady in June it should work equally well in April and May. Mr. Macdonald and Mr. Crawshaw have both written of the desirability of so-called cures being tested by an independent committee. Has Mr. Simmins yet offered to submit his remedy to such a test?—C. H. Heap.

DERWENT NOTES.

[8674] *Strengthening for the Heather.*—Mr. Kidd (p. 16) and Mr. Crawshaw (p. 59) kindly relate their experiences in working this system. For several years prior to 1909, I ran my apiary absolutely on this method and invariably with great success. From stocks of sufficient strength I made artificial swarms in June, headed by fertile queens which I purchased. I bought swarms from the South to stand side by side with very weak stocks. At the dawn of the heather harvest I united the parent stocks and their swarms, and the weak stocks and the bought swarms. The best frames of brood were put in the united hives. These frames usually numbered eight or nine, and were placed 1¼in. apart. I may say I always used the plain top bars, as recommended by the late Mr. Heddon, of America. From three stocks in one season worked on this system I secured 200 lb. sections of heather honey, and during a period extending over three years, I secured £35 worth of heather honey. I had four hives during two of the years, and only three the other year. The great disadvantage of this system is that it means the abandonment of the clover harvest. Its advantage, in addition to the increased honey yield is that there need be no anxiety about loss occasioned by decamping swarms.

Grouping Hives for Wintering.—I was much interested in the particulars Mr. D. M. Macdonald gave a few weeks ago of the method now being adopted in America of grouping hives to ensure greater safety during the winter. In 1911 I commenced to winter my stocks on this principle, but with a variation. I put

two stocks in one hive, separated by a thin division board. The entrance for one stock is at the front and the other at the end of the hive. I allow room at each side of the division board for eight frames. My bees came admirably through the winter of 1911-12 on this system, and I think built up more rapidly in the spring than those in single hives. As soon as the bees cover the eight frames they are transferred into their summer or single hives.

The Survival of the Fittest.—Usually we breed queens from those which are most prolific during the summer months, but Mr. Crawshaw (page 37) shows us that there is something more important and vital to be taken into consideration, viz., the wintering qualities of bees, and that we should only rear queens from stocks that best withstand the vagaries of our English winters. Mr. Crawshaw is quite right. However prolific our queens may be in the spring and summer, it will not avail if their offspring lack the vitality to bring them through the winter, or cause them to be a dwindling force in the spring.

How Bees are Wintering.—Although the winter has been exceptionally mild in this part of North-west Durham, there has been a great lack of sunshine, and the bees have been confined to the hives for practically two months. So far, there appears to have been a greater mortality amongst my bees this winter than last. At any rate, I have raked out of each hive a greater number of dead bees. This may be the result of the long confinement, or the cause may be that breeding operations are proceeding at a more rapid rate than usual owing to the mild weather. This week we have had five days of brilliant sunshine, and the bees have been flying as if it were mid-summer. After their frequent flights they all appear clean and healthy.—W. Pears, Blanchland.

BEE ASSOCIATIONS AND THEIR WORK.

[8675] It was not my intention to write further on this matter but the letters appearing in "B.B.J." (Feb. 6th, page 56) compel me to make a few comments.

Mr. Forse, in his endeavour to explain away my arguments for reform, has met with a serious reverse in the letter by "An Old Member, Wordsley," who tells us that at one time the Staffs. B.K.A. had a membership of 480, and net annual income of £70, while Mr. Forse states that the present number of 200 is "the greatest on record."

I will pardon Mr. Forse for this slight (?) error, which shows how little knowledge he possesses of the Association in its former days. Readers will readily recognise that he is quite new to the work, and has had to rely on information supplied to him by some one who assumed to know but did not.

It is quite easy to be misled by what one is told, but in future Mr. Forse will be well advised to make sure of his facts before making statements of a similar nature.

The following are a few facts which are well known to the Secretary: According to the last report the Association received in subscriptions the sum of £29, and had on the roll 188 members. Of these 44 are credited with paying an annual subscription of 1s. each (certainly a low estimate of the value of an expert's services), and fifteen others are ladies and gentlemen (not bee-keepers) who have given sums of 5s. and upwards as prizes at the various shows held in the country.

The object in retaining these 1s. members, and in acknowledging the fifteen others as members, is obvious. They help to bolster up the total number of members of the Association, while some of the latter are allowed three or four visits in a season; this is unfair to the other members.

The whole matter may be summed up as follows: The system of touring adopted is very convenient to the expert, for, according to what has been said, if only fifty members ask for a visit, then only this number of visits are given: the expert (quite in order) pockets the same amount as if he had paid the whole 200 visits, while at the same time members are complaining and leaving the Association because they never see the expert. Novices are enlisted to fill up these gaps, they remain only for a short time, leaving disgusted. This is no fancy picture, but a fact well known to others as well as the writer. The excuse that "the system of asking for a visit was adopted several years ago on account of there being so many experts in the county" is very weak, as even now there are only seventeen such. As to the committee, Mr. Forse admits slackness, but at the same time tries to screen the committee's remissness, because they are "stalwarts." The Hon. Secretary knows quite well that this statement applies to a very small number. Keep the stalwarts by all means but introduce new blood by careful selection from bee-keeping members with experience. Novices should not be admitted. Surely some one is to blame for not taking advantage of the experience of an expert of the standing of Mr. J. Price by electing him on the committee independent of his making an application.

Surely Mr. Forse is wrong when he says "the services of the expert are at the disposal of members whenever and wherever

required." No employer would allow this, least of all a railway company.

In reply to Mr. Forse's suggestion that I should come out boldly and give my name, and to Mr. Jacques' kind invitation to correspond privately with him, I fail to see that any good purpose would be served by so doing. Let it suffice that grievances have been pointed out, that these can be remedied by changing the system of touring, and that the sooner they are removed the better it will be for the Association and its officials.

I leave your readers to judge whether my comments have been out of place or that there has been need to arouse the Association to a sense of its responsibilities.

Finally, I should like to say how pleased I was to be supported by such facts as are given by "An Old Member, Wordsley," and thankful to our editors for kindly allowing us space to air our grievances. Hoping matters will be put right at our annual meeting. I again sign myself, A STAFFORDSHIRE BEE-KEEPER.

[We have allowed our correspondents considerable space for discussing this matter. The numerous letters received by us on the shortcomings of this Association show there is something "rotten in the state of Denmark." We are unable to print these, and would advise those members whose letters have not appeared to attend the annual meeting, and by their vote put matters right. We must now declare the matter closed so far as our columns are concerned.—EDS.]

PROPOSED BEE ASSOCIATION FOR SHEFFIELD.

[8676] In response to my letter in BEE JOURNAL of February 6th, sufficient names have been handed in to me to warrant my calling an early meeting, which will be held at the Wentworth Cafe, Penstone Street, Sheffield, on Wednesday, March 5th, at 8 p.m. All bee-keepers are invited to attend.—W. B. TALLENT, Broomhall Street, Sheffield.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

How Pollen is Gathered (p. 34).—May I assure Miss Betts that the bees do quite consciously stick the pollen together, and that the process is by no means so accidental as is suggested in some of the older treatises. Whether the natural oil be used for the purpose or not, saliva is added by the bee, in the manner already described by me. This process can be observed on the *arabis*, where the pollen is bitten from the anther, which is held for the purpose by the forelegs. The pollen is then kneaded by the mandibles, working independently, rather like a pair of butter-pat boards, Scotch hands as they are called. The mandibles, being hinged, have not quite the same freedom, but they work alternately, the curved edge, or biting portion of one mandible rolling the pellet up the interior surface of the other. The paste is then transferred to the legs, each leg being cleaned between the next posterior pair of legs, which clasp it and help to support and brush it in turn. Finally, the pollen is scraped into the corbicula, as described by Mr. Sladen.

Petrified Honey (p. 40).—Now, why should Mining-expert Terry make a mystery of this delicacy, and the whereabouts of the petrifactory? We know dozens of bee-keepers who would supply a stone of honey at short notice! Most probably the stuff is not honey at all. At any rate, we do not know of any process of turning honey into a stone which would resist weather and yet remain sweet.

Does a Bee Drown? (p. 45).—I think that if Mr. Heap will try the experiment for himself he will see that Mr. Simmins is right, and that his own explanation is wrong. If a bee is placed in warm water (so that it shall not become inert too quickly), it will fill up with the fluid until the abdominal sections become greatly extended. Whether the fluid enters also through the mouth I am unable to say definitely, but the capacity of the honey sac is insufficient to account for the distention. That this distention is not due to putrefactive gases is shown by the fact that the bee is alive. One may often come across such bees, where they have had accidental access to a syrup-feeder, alive and slowly kicking but quite water-logged.

Removing Propolis (p. 47).—The following is a useful tip for cleaning hands, however dirty they may be, as for instance, when one has taken down the engine of a car! Pour a little olive oil into the palm, and then thoroughly work it, dirt and all, over the hands wash fashion. Then take a smear of soft soap and do likewise, then wash with water. I am not sure that this will remove propolis, but it will shift pretty well everything in the shape of dirt. "Vim" will remove propolis.

Flight of Bees (p. 54).—I think that Mr. Moir will find by experiment that he is incorrect in stating that the balloon is more easily propelled when inflated. Experiment will serve to show that a solid rubber ball is more easily moved than the same weight of rubber inflated. There can be no question as to which is more readily thrown. There are, however, several factors which may confuse the issue. Differences of elasticity and bulk affect the

result of varying blows heavy or light, impact or push—as the experiment is tried in air. The apparent travel of the toy balloon is probably due less to its own momentum than to the current of air caused by the propelling arm. It should not be lost sight of, however, when considering momentum, that the inflated balloon is really a heavier body. Momentum is not, however, the true subject of discussion.

Queries and Replies.

[8594] *Bees and Neighbours.—Excessive Swarming.*—I should be glad of your advice in "B.B.J." on the following:—(1) I have six stocks of bees, the backs of the hives being about four feet from a five foot wall. On the other side of the wall is a school playground and during last summer several children were stung. Do you think that the erection of a 2½ or 3ft. trellis along the wall would reduce the danger to a minimum? I do not want to go to this expense unless it is likely to prove effective. (2) Last spring I was troubled with undesired swarms. The stocks were supered with shallow frames the last week in April, and on the visit of the expert on May 15th, the bees were working in them nicely. The honey was put in the side frames, the middle ones being deserted, except for a little stored in the top corners. I used Wilkes's excluders between body box and super. All stocks had swarmed by June 5th, and on examination queen-cells were found at the *top* of the brood frames. In the event of another early season would it be advisable to use in the super ten frames fitted with brood worker foundation, and discard the excluder. Then if a second super is required place it on top with the excluder underneath the second super. Would the rearing of brood in first super have any detrimental effect on the honey which may afterwards be stored there?—H. K., Rugby.

Reply.—Although the erection of a trellis along the top of the wall would greatly reduce the danger of the bees stinging the children, we would advise you to move the hives to some other part of the garden, for two reasons. One being that although you place a trellis along the wall odd bees may get over, and it is only natural for children to try and knock these down with their caps, so infuriating the bees. Then the position is one conducive to swarming, as the heat from the sun is reflected back on to the hives, so making them too hot. This is the cause of the excessive swarming you have experienced.

[8595] *A Lady Beginner's Queries.*—I have been left with a hive of bees to look after. In addition to an unfortunate and unreasoning dislike for bees and wasps, the result of a very bad stinging by the latter when I was a child, I know absolutely nothing of them or their habits, &c. However, I mean to overcome my dislike and see whether I can make a success of them, and add to my small income. Is it possible for a woman to be a successful bee-keeper? The hive in question has not swarmed for some years, I believe, but two years ago 20lbs. of honey was taken from it and last year—a poor one—a friend took out about 10lbs., but now I must manage myself. I was afraid as last season had been a poor one that not enough food had been left, so at the end of January I made a candy cake as instructed in the "Guide Book," and inserted it under the quilts. On lifting the covering I noticed two or three whitish worms just underneath it. Are those moths or embryo bees? Was it too early to disturb them, and when should I give flour cake, so as to strengthen them sufficiently to get a swarm to put in an empty hive, which I have by me. As the other hive has been occupied about ten years, would it be better to change them from it to a clean hive, and when? Any hints will be very helpful. I wished to pass an examination on the subject, how should I go about preparing and studying for same?—A Beginner, Ross-shire.

Reply. Women frequently make very successful bee-keepers. You should transfer the bees into a fresh hive on a fine day in April. Flour candy can be given any time now. The worms were the grubs of the wax moth. The peep you gave to see if the candy was all right would do no harm. You can obtain particulars of examination by writing to the Secretary B.B.K.A., at this office, enclosing stamp for reply.

[8596] *Spring Disinfection.*—It will shortly be "spring cleaning" time in the apiaries, and I should like your advice on the following: It is my usual plan when transferring stocks into clean hives in the spring to give the inside of hives a coat of Calvert's No. 5 carbolic undiluted, letting them stand a few days until dry and all the smell is gone, before using again. I have never heard of any "Isle of Wight" disease in this county, but instead of using the carbolic I thought of substituting Ayles' Cure as a preventive against the disease. Would this be any advantage, and would it be as good a disinfectant as the carbolic acid? In the examination for third-class certificate I understand the candidate has to drive a skep of bees, find the queen, &c., and *return* the bees back to their own skep. I presume they would be returned by the

same method as in hiving a swarm in the ordinary hives. Is this so?—NOVICE, Westmorland.

REPLY.—As there is no "Isle of Wight" disease in your neighbourhood continue with the carbolic. Yes, the bees are run back as in hiving a swarm.

Notices to Correspondents.

H. E. SCROPE-VINER.—*Illustrations in "The Honey Bee."*—(1) The section of thorax, on page 45 of "The Honey Bee," is a horizontal one (not longitudinal, as stated erroneously by Cheshire), and is cut through the spiracles on the pro-thorax and meta-thorax, just below the wings. The neck communicating with the head is shown on the left side of figure. (2) Inasmuch as yellow striped bees are not indigenous in Liguria, but are found in the Italian alps to the east, the term "*apia ligustica*" is no longer applied to them.

BEGINNER.—*Ownership of Swarms.*—To retain ownership of a swarm you must keep it in sight until it is hived. If you followed it and another person refused to give it up, you could sue him for its value in the County Court. We judge from your letter that you lost ownership by not seeing and following the swarm.

G. E. M. (Abbey Wood).—*Transferring bees from Skeps to Frame Hives.*—You should work the bees down by placing the skep over a hole in the quilt. This should be done about April. Let the bees work themselves down and do not try shaking them out in front of hive as you suggest.

P. C. (Inverness).—*Bee Diseases Bill.*—The B.B.K.A. were informed by the Board of Agriculture that the Bill had been shelved for this session, and a notice to that effect appeared in last week's "B.B.J." The Association has not relaxed its efforts in the slightest, and when the Bill is brought forward next session additional information, and a great many assurances of the urgent need for the measure will be ready to strengthen the hands of those in charge of the Bill in the House of Commons.

Suspected Disease.

PRESHUTE (Wilts).—The bees were crushed flat in the post through insufficient packing.

COTTAGER.—The comb and bees were in such a disgusting state of decomposition that we could not examine them. It was with difficulty that we deciphered your letter, as it was saturated with the liquid. Letters should not be put inside the package with the comb, but either be sent separately or outside the box.

P. H. E. (Kingston), A. T. B. (Newport), H. J. (Upminster), E. E. (Chester), SANDY, A. H. H. L. (Sevenoaks), H. G. (Ledbury), and H. L. (Wolverhampton).—The bees have died from "Isle of Wight" disease.

W. A. W. (Royston).—The comb contains chilled brood. We should say the stock dwindled in late autumn, and this will account for the very few bees in the hive.

W. E. B. (Bedford).—The bees were too dry for examination. To avoid risk you should melt down the combs and carefully disinfect the hive before putting in another swarm.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

FOR SALE. Sandlake Apiary, 11 stocks, supers, extractor ripener, observatory, library, and appliances.—ALBERT ALLOTT, Sandlake Apiary, Kexbro', Barnsley. v 99

SELL, or EXCHANGE, "Transactions of the Entomological Society of London," complete for 1908, '9, '10 '11, and '12.—HERROD, "B.B.J." Office, 23, Bedford-street, W.C. v 90

WANTED, an Experienced Beekeeper in neighbourhood to remove colonics of bees from house roof.—Apply, R. G. CHAMBERS, Glyn-y-Mel, Fishguard v 96

240 EGG STRAIN BUFF ORPINGTON COCKERELS, April hatched, fine birds, 6s. 6d. each; White Wyandotte Cockerel, 5s. 6d.; White Wyandotte Cock, 1911, 4s. 6d.; stamp reply. —CRAWSHAW, Norton, Malton. v 98

PURE LIGHT CAMBRIDGESHIRE HONEY, 28lb. tins, 60s. cwt.; sample, 2d.—T. EVERETT, Soham, Cambs. v 93

PURE GRANULATED HONEY, 20lb., at 7d. lb., for sale; sample free.—A. E. BAILEY, Kingsnorth, Ashford Kent. v 92

WANTED IN SUSSEX, east, or near coast, small, old-fashioned House, with half to one acre garden; particulars by letter.—"POMONA," "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 97

GOOD QUALITY HONEY, six 14lb. tins, 7s. 6d. each.—STUBBS, Rempstone, Loughborough. v 94

BEE FLOWERS.—Limnanthes Douglassii, sow now; large packet (2000 new seeds), post free, 6d. P.O.—G. BRYAN, Greenhill, Banbury. v 95

PRINTING PRESS, metal type, accessories, 10s., great bargain; particulars.—W. WEBSTER, 291a, Normanton-road, Derby. v 100

FOR SALE, 2cwt. good Herefordshire Honey, jars or in tins; enclose 2d. for sample and particulars.—HELME, Norton Canon, Weobley. v 1

CATALOGUES, &c., of Apiarian Appliances solicited by T. J. KENNARD, Radyr, Leamington Spa. v 91

Editorial, Notices, &c.

ANOTHER YEAR OF PROGRESS.

With the Council meeting of Feb. 20th another year of the British Bee-keepers' Association has passed. It is good and wise at such periods to review the work done.

In June, 1873, forty years ago, the Association held its first meeting. It has had its ups and downs. It has had even to fight, often for existence, but it is to be hoped that this is all past and gone, for 1912 has been a year of very encouraging results, and the future seems to smile.

The most important feature of the past year is that at length the powers that govern us have been induced to recognise the auxiliary that apiculture is to agriculture. The Government grant has enabled great work to be done. The apiary established by that aid at the "Zoo" has been at each lecture and demonstration thronged with more students than could be accommodated, and the indoor lectures in the hall of the Zoological Society during the winter months have been very regularly attended, and especially by those whose coming on each occasion showed that they wanted to learn.

It is also gratifying to see that the counties have bestirred themselves, there being an increase in the numbers of affiliated associations, as also of the number of members. But there are still some counties without an association who ought to have one. What a pity it is that they do not bestir themselves.

The financial position, too, is strengthening. It is amusing and also profitable that during the year several anonymous amounts were sent to the various funds, one received this last week being a £5 note sent "*pour encourager les autres.*" The sender is asked to take this intimation as a grateful acknowledgment, and it is hoped "*les autres*" will take the hint.

It is pleasant then to be able to report such advancement in the twelve months past. It reflects great credit on the Council, who have given gratuitously such splendid service, and their energetic Secretary, who has so well carried out their intentions.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at 23, Bedford Street, Strand, London, W.C., on Thursday, February 20th, 1913. Mr. W. F. Reid presided. There were also present: Miss Gayton, Messrs. C. L. M. Eales, J. B. Lamb, T. Bevan, J. Smallwood, E. Watson, Col. H. J. O. Walker, and Sir Ernest Spencer. The Association representatives present were Messrs. G. R. Alder (Essex), A. Willmott (Hertford and Ware) G. J. Flashman, and F. Ford (Barnet), G. W. Judge (Crayford), and C. R. Pinker (Crystal Palace), and the Secretary, Mr. W. Herrod.

The minutes of the previous meeting, held January 16th, 1913, were read and confirmed.

Letters expressing regret at inability to attend were read from Messrs. T. W. Cowan, H. Jonas, O. R. Frankenstein, A. Richards, E. Walker, A. G. Pugh, and Capt F. Sitwell.

The following new members were elected: Miss M. Jones, Mr. J. Waterfield, Mr. E. W. Franklin, Mr. F. E. Lennox Brown, Mr. W. J. Wiltshire, Mr. E. A. Glen, Mr. A. G. Carpenter, Mr. S. J. Zachary, Mr. H. F. Freeth, Mr. J. H. Swanton, Mr. G. N. Walker, and Mr. F. Ford.

The following nominations of representatives from affiliated Associations were received and accepted: (Surrey) Mr. J. Kaehler, (Hereford) Rev. G. W. Turner, (Gloucester) Mr. G. N. Walker, (Glamorgan) Mr. F. Gravil, (Somerset) Col. H. F. Jolly, (Worcester) Mr. A. K. Moreton, (Devon) Mr. E. E. Scholefield, (Hitchin) Mr. G. J. Buller, (Cheshire) Mr. G. H. Garratt, and (Essex) Mr. G. S. Faunch.

The report of the Finance Committee was presented by Mr. Smallwood. The payments into the bank for January amounted to £36 13s. 7d., the balance at the bank at the end of the month being £119 11s. 3d. Payments amounting to £24 18s. were recommended.

The first-class examination was arranged to take place on May 30th and 31st. Colonel Walker kindly consented to act as examiner.

The date of the annual meeting was changed, (March 20th being the day before Good Friday) to March 27th.

Mr. Cowan consented to give an illustrated lecture on "Bee-keeping in other Countries"; Mr. G. Flashman a paper on "The Natural History of the Honey Bee"; and Mr. J. C. Bee Mason to show some new cinematograph pictures.

Letters of thanks for lectures were read from the Secretaries of the Essex, Somerset, Hereford, and Cheshire Associations.

Resolutions passed at their annual meetings urging the British Bee-keepers' Association to get the Diseases of Bees Bill introduced into Parliament again as early as possible were read from the Essex, Hereford, and Somerset Associations.

The Secretary read an anonymous letter expressing the great pleasure of the writer at the progress made by the British Bee-keepers' Association and enclosing a donation of £5, "*pour encourager les*

autres." It was resolved that the same be acknowledged in *The Times* and THE BRITISH BEE JOURNAL.

A letter was read from the Boy Scouts' Association asking the Association to grant prizes and appoint a judge at the Imperial Scout Exhibition to be held in Birmingham in July next. It was resolved to offer a silver and a bronze pendant, together with prizes of 10s. and 5s., and to ask Captain Sitwell to act as judge.

The next Council meeting will be held at the Zoological Gardens, March 27th, 1913.

GLOUCESTERSHIRE B.K.A.

The Annual Meeting was held at the Wessex Hotel, Gloucester, on February 11th, when a fairly good number of members assembled. Mr. G. N. Walker, Wotton House, was in the chair.

The Hon. Secretary presented the annual report and balance sheet, from which it appeared that the Association had made good progress, the membership showing a substantial increase, while it was financially in a sound position, as evidenced by a satisfactory balance on the right side. Mr. M. W. Colchester Wemyss, Westbury Court, Gloucester, was re-elected President, Rev. F. H. Fowler, Hon. Secretary and Treasurer, Mr. G. C. Langston, Visiting Hon. Secretary, and Messrs. H. E. Bailey, A. H. Bowen, E. J. Burtt, G. A. Calvert, W. J. Goodrich, W. F. Pick, F. Thomas, W. J. Watkins, G. N. Walker, W. A. Workman, were appointed the Committee. It was decided not to hold a Honey Show this year, in view of the fact that the Royal Agricultural Show was being held at Bristol, but prizes will be offered at various Horticultural Shows in the County. A strong opinion was expressed in favour of speedy legislation. Discussion took place on topics of interest connected with the Association and bee-keeping.—(REV.) H. F. FOWLER, Hon. Sec.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By George Hayes, Beeston, Notts.

HOW TO STUDY POLLEN GRAINS.

(*Continued from page* 53.)

If we wish to examine the pollen-grains in honey, all that we have to do is to take a drop of the latter, with a needle or glass rod, from the sample, which should of course, be in a liquid condition, put it on the centre of a slide, and cover it with a circle. On examining it we will almost surely find one or more grains, for being of about the some density as honey they are fairly well distributed in it. To get a fair sample of what the honey contains it is advisable to get a teaspoonful of the honey, put it in a cup or glass, add about half a cupful of water previously boiled and brought down to a temperature of about 100deg. Fahr.; stir gently until all the honey is dissolved. Then pour it into the larger conical glass, and let it stand for an hour or more. The pollen-grains, being heavier than the water, sink to the bottom, and are confined to the narrow part of the glass. Decant the water off to the last few drops, which will now contain all the pollen grains. Take up a small portion of this with the pipette and drop it on a slide, or, better still, if you have it, into the cell of an excavated slide; then cover it with a circle and examine.

For drawing the image seen through the microscope, an appliance called a "camera lucida" is used, and is fitted to the eye-piece of the instrument. By means of this we can see the image on a piece of drawing paper laid on the table, and simply trace it out to any scale. As the microscope has to be set horizontally for this purpose, it can only be used for dry grains, so that I find it better to always draw them from sight.

Measuring Grains.—For this purpose you will require a micrometer slide, costing 5s. This is an ordinary slip with the centre marked off in divisions of both hundredth and thousandth parts of an inch. To use it, the object is adjusted, and with the aid of the camera lucida its dimensions are indicated on the paper. The slide containing the object is then removed, the micrometer slide is placed in position, and the indications on the paper are read off to the scale. Another way is to put the pollen-grain *on* the micrometer slide and view both together through the microscope, but this is not always satisfactory, because they each lie at different depths, and it is not easy to see both together, nor can you always ensure getting the grains just where you want them.

I do not follow either of these methods, but find the following the handiest and most reliable. I have an upright camera, which is made to fit over my microscope when it is in the vertical position, and which can be lifted on and off at any moment without disturbing anything under observation. The micrometer slide is put in position on the stage and focussed. I have marked a square inch on the focussing glass of the camera, and this inch space is divided by both horizontal and vertical lines $\frac{1}{10}$ of an inch apart, so that we get 100 squares $\frac{1}{10}$in. each. The camera bellows is now extended, and the focussing attended to, until the lines of the micrometer slide are clearly defined on the focussing screen and coincide with the lines in the square. These squares then represent $\frac{1}{1000}$ of an inch of what is seen on

the stage. Remove the micrometer slide, put on one containing pollen, adjust until you get one or more on to the square, when it can be seen at a glance what they measure in the thousandth parts of an inch. If the camera is firmly fixed at that, and the same objective used, it is always ready for the purpose.

This camera will be more fully described when I come to deal with photographing the grains.

Preserving.—There are numerous mediums for preserving, but, as I find honey the most easy to use and the best in operation, this only will now be dealt with. Collect your pollen on a slip of glass in one of the ways previously indicated, then with a knife convey it into one of the small tubes, take about half a teaspoonful of the honey, which has previously been freed from pollen-grains, and put this in also. Then well mix the whole together with a small glass rod, cork up, label, and put the mixture away. For storing these I have a box 8in. by 6in. by 3in. deep. I took a piece of stout cardboard to fit inside, and with a $\frac{1}{2}$in. leather punch perforated the whole surface. Then underneath were glued three strips of some material 1in. deep. A layer of wadding was first put on the bottom of the box, then the perforated false bottom over this, and I had a good receptacle for all my tubes. In addition to the label on the tube I have some small round gummed labels, so that each tube can be numbered on top of the cork. In the lid there is a list of contents of each tube numbered to correspond with those on the corks, so that it is easy to find anything required.

When it is desired to examine any of these samples, it is only necessary to take out a small portion of the honey—which may, of course, have granulated by the time you take it—on the end of your glass rod, and put the rod with the honey in an empty tube, which should be placed in half a teacupful or so of warm water. Stir gently, so as not to break up the pollen-grains too much, and then leave to settle. This done, take your pipette and lift out the upper portion of the water, leaving only about a $\frac{1}{4}$in. in the tube, which, of course, will contain the pollen-grains that were in the honey you took for treatment.

---

* THE HONEY-STAR.

The total of the novels written around bee-keeping can probably be reckoned up on the fingers of one hand, and they of our craft who possess at once, expert knowledge, and the power of weaving the plot of a novel are even still more limited in numbers. When, therefore, such a happy combination does occur, it is right welcome.

Mr. Tickner Edwardes' "Honey Star," then, is one of these fortuitous happenings. Like all true bee-keepers, the love of his pursuit, is to madness, and from the fulness of the heart, the mouth speaketh. Write, he must, for the poesy is in him, and he must write about bees. The scene of the story is on the Sussex downs; there, where fruit blossom and clover and heather, following in sequence, create a land o'erflowing with nectar, Caleb March, the old "skeppist," has in the opening chapter, been laid to rest. His widow and "Lisbel" have for support the skep-making and the "Old Whinbury beeves," in the "orchard plot down by the riverside." They live in the "ancient thatched cottage behind its barberry hedge at the crook of the village street." They hold as their worst enemy "Mystery" or "Gentleman Laughton," who lives at the "Bee-barn," where "there was a strip of flower garden under its grey-flint walls where the bees kept up an incessant droning melody and beyond this, a stretch of grassland sloped steeply down towards the village, dotted over with innumerable bee-hives, all of the most approved modern pattern, and all painted spotless white."

A solitary bachelor was Claud Laughton, the "Mystery," because no one in the gossiping village could find where he came from. His sole attendant and help, the half-witted "General." Erstwhile a journalist, ten years before he had married a sixth-rate singer, who after a year of dissipation committed suicide (it was so reported) and Claud had buried himself in this village, almost a woman-hater, although more than one pair of bright eyes sought to convert him from that heresy. But how he was ultimately converted let the novelist tell. It sufficeth, that as in all novels, everything rights itself in the end. Sweethearts and wives are found for all who need them, even for the naughty girl who tries to make all the mischief she can, but she was real sorry for it. And the villain (there is only one) gets—Ah! that is in the tale, and I must not say too much.

Mr. Edwardes is comparatively young, but unless he is inspired by a traitress to her sex, he has evidently closely studied the working of woman's mind, as witness Nellie Brimbles' consolatory speech.

"Doan't ye take on so, George dear," she said pitifully. "Lisbel ut bean't her fault like. 'Tis allers so with gells, George. Year in an' year out they be just maids an' all men be nought to 'em. An' there comes one along an' all of a suddent-like there be none other for 'un i' th' wureld. Hoame an' th' ould folk an' all friends,

* The "Honey Star," by Tickner Edwardes, London, Hutchinson and Co. (and the "British Bee Journal"), price 6s.

they be clean swep' away, an' nauthin' matters to 'em but the wan man's company. Ah! I arn't lived seventeen long year' i' this wureld wi'out"—"at that, and her stage solemnity, George Lindup could not forbear a smile, in spite of the trouble that was on him."

And for word painting, the art to make the scene stand out before us, let us take one extract—Lisbel is making skeps.

"The sun had got round in the sky, and now poured its yellow rays aslant into the corner where she sat. The straw became heaped spilikins of gold, and the bramble bines whip-lashes of living emerald. The bees that came lancing through the shadowy arcade of foliage on either hand, seemed to strike fire as they cut into the zone of light."

It is a work that every bee-keeper should have on his library shelves. It is fascinating. It grips you and you cannot lay it aside until you have consumed the last word in the last chapter.—J. SMALLWOOD.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

"A NEW FLIGHT THEORY."

[8677] Below is an extract from one of our leading aeronautical journals of an article by Dr. Orville Ward Owen, of Detroit, U.S.A. on a new theory of flight, which, if not instructive, is certainly most amusing in reference to the power of traction credited to the honey bee.

Dr. Owen has put forward the theory that the power of flight possessed by many birds and insects is due, not to wings used as aeroplanes, but to some subtle power created by vibration. The author of the article in question subsequently says: "There can, I think, be little doubt that the soaring flight of many of the larger and some of the smaller birds is very largely due to the use of wings as planes . . . . and some birds and many insects are provided with wings of so small a size in relation to the size of their bodies, it seems impossible their flight can be due solely to wing action as aeroplanes." What then aids them in their flight?

Dr. Owen says "Nerve vibration," and, in support of his theory, he adduces the following experiment which he made with a bee:—

"An ordinary honey-bee will fly with the speed of an express train, and when loaded up with honey, will carry thirty times its own weight through the air." Taking one of these insects for experiment, Dr. Owen rolled it in a plate of honey and then observed its movements through a magnifier with a view to show that the wings were really the propellers used in its flight, and not supporting planes, or suspensory apparatus as commonly understood. And this was what the doctor saw: "The first thing the bee did was to clean its legs and wings very thoroughly and carefully. Then it settled itself down in the honey and—began to buzz. The sound of the buzzing grew louder and louder until it reached a certain note—a certain rate of vibration had been reached. Then the bee just sailed away as gay as a trivet, smoothly and easily and without difficulty, in spite of the heavy load of honey with which its body was smeared."

Just picture an ordinary honey bee carrying thirty times its own weight and flying at the speed of an express train. What visions this inspires of tiered-up supers being filled with the luscious sweet almost as fast as one could get them emptied and returned. But alas, we in this country know better. It would certainly be interesting to learn how a bee accomplishes the feat of cleaning its legs while in a plate of honey, and also in what part of its anatomy the large volume of nectar of pollen is usually carried by the Detroit honey-bee.

Whilst writing on this interesting subject of flight, I take the opportunity to quote the following figures given in an article recently published in *Engineering*. This table has been calculated to show a comparison of the wing surface required to support a pound weight in flight, from which it will be seen that as the size of the insect or bird increases the wing area tends to decrease.

Insects:		
Gnat	49—42 sq. ft.	per lb.
Dragon Fly ...	30—22	do.
Bee	5¼	do.
Stag Beetle.....	4½—3½	do.
Birds:		
Swallow	4.1	do.
Kite	2.0	do.
Pigeon	1.1	do.
Condor	0.6	do.

—G. W. JUDGE.

KILL OR CURE?

[8678] I had hoped that Mr. Macdonald would have replied categorically to my letter (page 15), January 9th, but I suppose I must take the casual reference worked into his Review column on page 47 as the only notice he takes of my remarks.

Is the case he quotes to the point? Pre-

sumably, the disease referred to is foul brood. I do not think anyone here will agree that foul brood is incurable, or that it is not worth while to dose a stock in order to cure it. The point of the quotation he gives is not that the disease cannot be cured, but that it is cheaper to kill a stock than to waste time in curing it. That may well be the case with foul brood, because when this disease is in the hive, it soon becomes apparent, but the "crawling sickness" is difficult to detect until in a very advanced stage, perhaps months after the actual infection. It is one thing to destroy one or two, or even more, foul broody stocks, and to feel that the infection has been promptly eradicated, but it is quite another thing to destroy stocks suffering with "crawling sickness," and to still feel by no means sure that the infection has been wiped out, to be very sure, in fact, that it is only the beginning of troubles.

Mr. Macdonald uses the expression "weak kneed." I put two analogous cases and ask in which of each the actor is generally regarded as the weaker. One man suffering from a supposedly incurable disease, decides to take his own life, and so end it all, while another bears his agonies patiently, and hopes on to the end. Again, one trader in difficulties gives up and files his petition. The other declines to cut his liabilities, and struggles on under his load in the hope of ultimately paying in full. *Verb sap.*—HERBERT MACE.

P.S.—Since I wrote the above I have slept. Waking betimes, there came to my recollection the case of a dame who, when one of her children developed measles, promptly put all the others to bed with it. "For," quoth she, "they're sure to take it and they may as well all have it together!"

It's not half a bad idea. As soon as the first stock is affected, change its position with another. Shift combs and so forth about daily, so that in the course of a week the whole apiary is in the same bed. *Courage, mes amis!* H. M.

A CURIOUS OBSERVATORY HIVE.

[8679] I enclose a picture of my glass hive containing a late swarm of last year. I have heard it said that bees would not work in glass, but these worked well considering the bad season in 1912. The hive has two entrances, one at the bottom with a funnel-shaped strainer fixed on for them to alight upon; the other is on the upper part above. The bees used both when busy, and as soon as cold weather came they partly propolised the top entrance up. I exhibited the hive in a grocer's shop window for two days, and it was much admired. Several ladies went in and asked the tradesman numerous questions, some rather amusing to a bee-keeper. One inquired: "Are the bees making honey now?" "Oh yes, madam," replied the man. "Where are they getting it from?" "Oh, somewhere down below." "Really, how interesting," said the lady, full of amazement. Here was a good chance to sell some honey, which, no doubt, the shopkeeper took advantage of.—J. REAVELEY, Harrogate.

A CURIOUS GLASS HIVE.

[We should like to hear more of Mr. Reaveley's curious hive. We should not call it a very comfortable home for bees, but it shows that they will sometimes thrive under adverse conditions.—EDS.]

SLUGS AS BEE ENEMIES.

[8680] I shall be obliged if you can find space in the JOURNAL for the following—new—experience to me. I am watching a case of suspected "Isle of Wight" disease, and it is difficult to keep close observation, as I am away all day. There are a good number of bees flying at present, and the stock appears very strong, so the trouble may be old age. I have, however, made a practice of picking up and burning all dead bees outside the entrance of the

hive, and I was much surprised to find several slugs eating the bodies. They appeared to be severing the head and abdomen, and leaving the thorax, and as one bee was actually being attacked while in a comatose state, it seems to me that hundreds of germs may be set free that would otherwise have perished through frost, &c. Anyhow, considering the havoc this disease is making among bees, it seems worth the trouble to pick up and destroy all dead ones at this season. I suppose the very mild winter makes the slugs so numerous and early?—A. H. Hamshar.

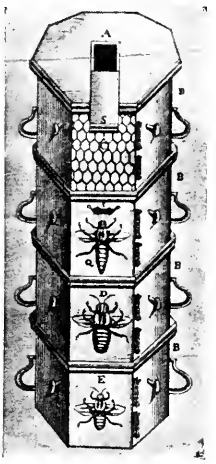
[The black or brown slug (*Arion empecorum*) is included among the enemies of bees, though owing to its slow movements it is not a very formidable one, and can be prevented from entering hives with a little care. Though these creatures usually feed on vegetable substances they have been known to devour worms, raw beef, and even each other.—Eds.]

"BLURTS FROM A SCRATCHY PEN."

OLD BEE BOOKS.

[8681] What is the attraction in these old books? Why do we trouble to pore over the faded printing and the leaves, which the repose of two-and-a-quarter centuries on the library shelves have changed from white to the brown of the first ripe acorn. Do we seek information? Not as to the wisest way of handling bees, for though in Moses Rusden's book there is evidence that, according to his lights, he has diligently studied their habits, yet so far have we advanced since then that it were waste of time. Why then, do we so reverently take them down? Because in their pages we hold communion with the thoughts, the ideas, even the personalities of bygone days. We are with them in their old bee-gardens (how much sweeter sound that word has than apiary); we listen to the old dame telling her neighbour, how to some folk bees never brought luck, strive how they might, while to others the luck came even without trying for it. How Goody Simpson could never expect to do good, for she had not paid for hers either in gold or corne (so Moses Rusden spells it), but in silver; and, there again, there was old Hutchins, he had brought his bees up the river, and everyone knew that must be wrong, even if, as it were to make things worse still, he had not brought them northward instead of south. But Gossip Smith, her two hives were all right, for one had been given to her and the other was a swarm she found. Our forefathers mistrusted the evil chance. The working of the hive and the wisdom of the bees seemed to them uncanny, mysterious, and they believed that the bees knew their owner, and should he die and they not be informed of the loss, so that they might mourn for him (some even said it was necessary to tie crape around the hives) they would pine and never work for his successor. But this last superstition has existed to our days. I have often been asked, even recently, why it was necessary to "tell the bees."

I wonder whether any Bee Journal readers ever saw the points of similarity between the "king bee" (queen) and "a most stately buck gray-hound"; or between the common bee and "a little fierce bull dogg"; or the drone and "a great mastiff dogg." I am much afraid I have never been quick enough to detect it. It is rather obscure, but I presume this is his mode of illustrating their respective virtues. And of their valour his eulogy is immense and equally naive. Let me give it in his own words. I shall spoil it by attempt to alter.



RUSDEN'S HIVE.

[The Octagon boxes fit, one on top of the other. The slide S permits the excess of bees to ascend. It is interesting, as the first recorded instance of system in the attempt to store surplus honey in wooden hives. In the original print, the letters Q, D, and E, do not appear, the Royal Crown sufficed to show the "King" bee.]

"A single bee, if a man do but affront him, shall pursue him though he were in the midst of an army, and not leave him for all the terrors of gunshot, though whole vollies were discharged against him." This is akin to using a Nasmyth hammer to crush a butterfly. Let me elaborate the picture a little more. A whole regiment of soldiers, time, end of the reign of Charles II., grimly loading their old-fashioned flintlocks, and at word of command volleying at a bee. Poor bee!

Thousands of years ago Aristotle

tells us how they used to "tang" earthenware vessels and vessels of brass to recall to earth the high-flying swarms, and Pliny, with a host of others, adopt the tale. Some have even said that the music (?) was to establish a claim to ownership as long as the swarm might be kept in sight. But no! All are wrong. Bees hear, this we all agree. And Butler, in his "Feminine Monarchy" (whom Rusden quotes) says: "If by her voice she bids them go, they swarm." The ringing of pans then is to "confound the hearing of their leaders' voices and notes." How very stupid previous generations must have been not to think of this, and we, why have we forgotten it? It is just as probable as any other explanation, but it is very sad that so many years elapsed before its discovery.

I must confess I am disappointed with Rusden, and mainly for two reasons. That he was a shrewd observer of bees and their habits many of his notes betray. He must have closely studied. Yet he still adhered to the fables of Aristotle and his copiers as to how the bees were generated from flowers. He even devotes a chapter or two to prove that the pollen carried home on the thighs of the bees was "generative matter," which the "sperme" of the "king bee" fertilised, thus producing a grub and ultimately a bee. And this he obstinately sticks to, although Butler (1634) and Purchas (1657) had demonstrated the sex of the ruler of the hive, and hazarded a good guess that she was the mother of the thousands. Rusden himself relates that on one occasion a "king bee" laid twelve eggs on his hand, and describes most exactly the action of the queen when depositing her eggs. It would seem as if he purposely throttled his experiences and information. And this is my other trouble. Thank heaven politics and bee-keeping do not link arm-in-arm. But our author goes out of his way in many instances to lavishly flatter the reigning monarch. Possibly there was some excuse for Rusden in the circumstances of the age. He wrote between 1678 and 1685, the latter years of Charles II. Escaping from the stern rule of Cromwell and his army, the nation had given itself up to the opposite extreme, and he who flattered most was (apparently) loved most. But the palate is cloyed even by honey. Personally, I am a loyal subject of our king, but the superabundance of these honeyed words are conducive to that disease so peculiar to modern times. They "get on one's nerves."—J. Smallwood.

BEE-KEEPERS' ASSOCIATION WORK.

[8682] As one deeply interested in our County Bee-keepers' Association, and desirous of extending its work amongst these northern country districts, I should be pleased if you could tell me of any county where the annual meeting is made a movable one, being held at different centres, and if so, does it tend to increase the number of members, and the interest and attendance of those already in the Association? In this county, which is a very large one, the annual meeting is always held at Preston, and there is a great desire among the Northern members to have it occasionally in their district. With your wide experience—or perhaps this may catch the eye of other secretaries or experts—you may be able to say whether the suggestion would be worth a trial. Kindly oblige in your next issue, if possible.—Wm. Lloyd, Lancashire.

[It is advisable to get a good centre in the county for holding the annual meeting. There are several associations which change the meeting place, and as they continue to do so we can only surmise that the plan is successful. In Lincolnshire, which is a large county, the annual meeting is held in a different part each year.—Eds.]

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

From Gleanings.—"Mr. Doolittle says he would prefer to have long-lived bees for honey-gathering, even if they were not quite so numerous, rather than a populous colony of short-lived ones. Some have even asserted that great prolificness is often at the expense of other desirable qualities." I say amen to this because experience taught me it is not always the most prolific colony that gives the most surplus. According to Wesley Foster, "The trouble with the beginner is that he is so enthusiastic that he goes through his one or two hives every day or two and worries the bees to death, or at least secures only a partial crop." The cure he advocates is to launch out at the beginning on a larger scale than the small number of hives generally advised, and, with more work, there will not be time to over-examine the small lot.

Mr. Byer, in his novitiate days, visited a large number of bee-keepers to discover the best means of wintering, and he came back with the idea "that their success was not due to any particular hive, packing, location, or other minor factors, but simply because they gave their bees abundance of good stores," and he has never since changed that view. Apparently this Canuck believes in a very liberal store cupboard, as experience has taught him that the 25lbs. or 30lbs. generally advised is too scant a store, and he always desires

to have more than that amount for safe wintering.

From "American Bee Journal."—Mr. Dadant, the new Editor, has been at the Ontario Convention, and he was much taken with the methodical inspection of apiaries. On visiting an apiary the Inspector leaves a duplicate card, which acts as a reminder, "and I am told that the owner is much less likely to defer or neglect treating the bees when he knows a record is kept by the other man." He also admired their Honey Sale Committee. So do I! He notes a United States anomaly: "Four ounces of merchandise will go to the ends of the world for two cents, while in their own rural route it takes four. A Japanese can send a 4oz. sample for less than they can send such another to a different part of their own town!"

Commenting on the recently published photograph of the compound eye of a bee in the BRITISH BEE JOURNAL, he says: "This one article is well worth, by its interest, the price of one year's subscription."

A new honey-strainer is described. "It has three strainers. The upper one is quite coarse, taking out only the larger particles of foreign matter. The middle one is a little finer, and the lower one is fine enough to leave the honey entirely clean. With this arrangement a large amount of honey will pass through before there is any clogging." The idea was "made in Germany," but all the same, it is a good one. One straining is seldom wholly effective, and two or more take time. Here the whole three are carried out simultaneously.

From the Bee-keepers' Review.—Parcel post is now in operation, and all are wondering if it will help the bee-keeper. Some are meditating forwarding 1lb. up to 4lbs. of bees in suitable boxes by post. It seems it is lawful, as the Act makes provision for mailing "live insects"; but although lawful it is questionable if it is expedient. In our country this means of forwarding bees by post never caught on, although the law allows it.

In extensive bee-keeping the steam-heated knife is becoming first favourite. "The capping-melter and the steam-heated knife are two of the most important inventions of recent years to solve the problems of handling large crops of extracted honey. This knife is the most practical tool ever put on the market." Many of these "extensive" bee-keepers have extractors holding six or eight combs, and they are often driven by small engines.

This paper, for the first time, has started a beginners' page; hitherto, only the "big 'uns" were catered for. In wintering with snow on the ground it is advocated that fronts should have the loose, powdery snow heaped up all round. After a thaw, straw should be scattered round the hives for bees to light on to prevent chill. Unused combs should be fumigated, carbon bisulphide should be employed, as it is most satisfactory, but use with caution, as it is highly explosive. "The entrances should be closed down according to the size of the colony, say, $\frac{3}{8}$in. by 1in. for a nucleus or small lot of bees, and 5in. for a strong colony." I dealt with entrances the other day. Many are coming round to the idea that it is a mistake to have an extra large one in winter.

From Canadian Bee Journal.—The annual convention at Toronto is one of the big events of the year in Canadian Beedom. Many young men attended, eager to learn the ways and wiles of the honey-bee and the profits that might accrue. Ladies were present in force, and deeply interested in the business. More than usual attended from the States. One interesting address dealt with combining bees, poultry, and fruit. Honey-selling was treated ably by Mr. Tyrrell. He asserted that salesmen were born, not made. The three influential factors in successful selling are the salesman, the thing sold, and the customer. The first factor is the most important The thing sold must have merit, and be worth the price asked, and the customer, if he doesn't know he wants the article, must be shown by the salesman that he really does.

From Australasian B.K.—The Victorian Government are bent on abolishing the box-hive, but they are to move slowly, and so as to cause as little friction as possible. "Australian Bee Lore and Bee Culture" is now out of the hands of the printer, and can be obtained from office of *Bee-keeper*, price 8s. 6d. and postage. The Editor tells us it is a book he can recommend, "truly an Australian bee-book"—but we are not informed who is the author.

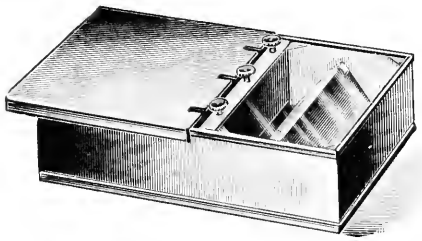
The South African B.J. records demonstrations at the apiaries of various members, a good number of honey fairs and shows, and a steady sale for members' honey at the Central Depôt. The essay competition brought out only two competitors. . One wonders on what principle the prizes were awarded.

NOVELTIES FOR 1913.

A NEW COMBINED SLOW AND RAPID FEEDER.

Mr. E. H. Morgan sends us a description of a new combined slow and rapid feeder, which he has just brought out, having found it work very successfully in practice in his own apiary. He says:—"The feeder is made of tin with a wooden partition inclined on both sides, up which

the bees climb to the syrup, which is contained in the reservoir. A piece of glass covers half the tin and enables one to see how the bees are taking down the syrup. This feeder, by means of the screw valves (three in number) allows the syrup to drop into the receptacle, and none drops on to the frames or the bottom of the hive. The screws can be regulated to a nicety. One



COMBINED SLOW AND RAPID FEEDER.

can tell whether the bees want the syrup or not by seeing if there is any accumulation in the receptacle. As a rapid feeder, all one has to do is to raise the screws and the syrup finds its own level in both the reservoir and the receptacle. Another point is that in my experience and those of other bee-keepers who have tried it, there is no loss of bees through drowning. They seem to be able to crawl out (even though they may get into the syrup) by means of the glass which affords a foothold through being made sticky by syrup being sprayed by any immersed bees. The illustration will enable anyone to follow the description."

The inventor has put the sole manufacture of these feeders in the hands of Messrs. James Lee and Son of Uxbridge, Middlesex.

Queries and Replies.

[8598] *Insurance.*—I shall be pleased if you will enlighten me on the Insurance Scheme for bees. In spite of your reply to S. Karm, on page 69, "B.B.J.," I am still in the dark to a certain extent. My apiary is in my garden (about 500 sq. yds.) and there are houses all round. Now, if this insurance policy only covers the apiary proper, it seems to me that it is practically no use at all, as nobody outside my own family is likely to receive any injury from my bees. I should be glad if you will tell me exactly what it does cover. I was under the impression that if my bees stung anybody's horse or dog, for instance, whether far or near from my apiary, I should be free fom all responsibility. Is this so?—IN THE DARK, Derbys.

REPLY.—The policy covers damage to third parties outside your apiary. For instance, if you had visitors, and they went near your hives and were stung, no compensation would be paid. Your bees might do damage under certain conditions, even 500yds. away, as several insurers have found. Sums of over £20 in compensation have been paid in several such instances, besides numerous small amounts, therefore your statement that the policy is of little use is not borne out by the facts.

[8599] *Dysenteric Bees.*—On opening one of my hives to inspect the food supply, I found that the bees are all clustered at one side, where there is at present a fair amount of stores. The middle combs appear to be empty, while the far side is fairly well filled, but the combs are mouldy in places, and some of the honey is uncapped, making the surface of the comb wet. At the entrance to the hive there is some excrement splashed about. Would it be advisable to put the full combs next the bees or would the mould be injurious? Is the excrement a sign of dysentery? I have at present put on a bottle of thick syrup. Is this right? In conclusion, I may say that the last warm day the bees were out in good numbers, and appeared quite healthy. Thanking you in anticipation.—A. C. G., Greenock.

REPLY.—You can put the combs next the bees, the little mould will do no harm. The bees have a slight attack of dysentery. You should not give syrup, as this will accentuate the complaint. Take it off and give a 2lb. cake of candy, warm.

[8600] *Honey from Diseased Stock.*—I have a quantity of thick honey taken from bees that have died from "Isle of Wight" disease. If I added water to it and boiled it, medicating with soluble phenyle or Naphthol Beta, would there be any danger in using it as food for healthy colonies? Thanking you in anticipation of your reply.—W., Essex.

REPLY.—On no account should you use the honey as bee-food. The safest plan is to burn it.

THE SONG OF THE BEES.

We watch for the light of the morn to break,
And colour the Eastern sky,
With its blended hue of saffron and lake,
Then say to each other "Awake! Awake!"
For our winter's honey is all to make,
And our bread for a long supply.

Then off we hie to the hill and the dell,
To the field, the meadow, and bower.
In the columbine's horn we love to dwell,
To dip in the lily with snow-white bell,
To search the balm in its odorous cell,
The mint and the rosemary flower.

We seek the bloom of the eglantine,
Of the painted thistle and brier.
And follow the steps of the wandering vine,
Whether it trail on the earth supine,
Or round the aspiring tree-top twine,
And reach for a state still higher.

As each, on the good of her sisters bent,
Is busy and cares for all;
We hope for an evening with heart's content,
For the winter of life without lament
That summer is gone with its hours mispent,
And the harvest is past recall.

I found above lines in a little old book called the "Evergreen," and thought I would send them to you.—J. A. HARRISON, Cambridge.

Notices to Correspondents.

F. JOHNSTON (Cheshire) and others.—*The Special Lectures on Bee-keeping.*—The Special Advanced Lectures now being given in various parts of Great Britain by Mr. Herrod have never been published, as he lectures extempore and without notes of any kind. At present Mr. Herrod's time is too fully occupied for him to write them out, but as so many requests have been made for their publication he is considering the matter, and may probably do this when an opportunity arises.

E. R. B. (Brixton).—*Supposed Loss of Queen.*—The bee you send is a large worker, not a queen, so the stock will be all right.

Suspected Disease.

ENQUIRER (Mansfield).—(1) Both lots have "Isle of Wight" disease. (2) One lot are blacks, the other hybrid Italians. (3) Yes, it is possible.

TAM (Gillingham), G. A. H. (Hinckley), A. M. (Ponders End), W. B. (Purley), and A. H. (Eltham).—The bees have died from "Isle of Wight" disease.

F. R. (Surrey) and DEAD BEES (Wrexham).—The bees were too dry for examination.

J. B. M. (Magstoun).—The brood is chilled. Burn the combs, and scorch the hive before using again.

D. C. (Haddington).—(1) "Isle of Wight" disease. (2) No, none has been discovered as yet. (3) Burn the frames and all internal fittings, and disinfect the hives by scorching. (4) The honey is harmless to human beings, but it will be safer to burn it. On no account allow bees to have access to it.

J. C. M. (Blairgowrie).—The bees were too decomposed for examination.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ¼*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

FOR SALE, "British Bee Journal," 1900 to 1912, thirteen volumes, clean, perfect, unbound, 25s.; "The Hive and Honey Bee" (Langstroth), 3s.; "New Bee-keeping" (Quinby), 2s. 6d.; "Book About Bees" (Jenyns), 2s.; "The Honey Bee" (Cowan), 1s. 6d.; "Life of the Bee" (Maeterlinck), 3s.; "Bees: Their Habits, Management, and Treatment" (Wood), 9d.; the above are all beautifully illustrated, excepting Maeterlinck; 2 coloured diagrams on the Anatomy and Physiology of the Honey Bee, mounted and varnished, with key, by the late F. Cheshire, out of print, 7s. 6d.; thirty-three Lantern Slides on Bee-Keeping; lantern, iron body, telescopic tube, rack, and pinions, two plano convex lenses 4in. diameter, achromatic lens, 3 wick patent refulgent lamp, silver plated, reflector, and patent carrier for slides, and explanatory book, all by Newton's, the celebrated opticians, cost nearly £5. £2 5s., carriage forward; the lot, £4. or part cash, and healthy bees; nearest offer invited; particulars of slides on application.—D. H. DURRANT, New Eden Apiary, Petersfield.

MOTOR BICYCLE, 2¾, low, good running order and condition, engine as new, adjustable pulley, new tyre; bees and cash, or £7.—WIGLEY, Olton, Birmingham. v 11

SEVERAL skeps of healthy Bees, 10s. each, satisfaction assured.—R. EAYRS, Dunstable. v 12

GENUINE MANX HONEY, granulated, in 28lb. tins; sample, 2d., cash or deposit.—HORSLEY, Merridale, 5, Empire-terrace, Douglas, I.O.M. v 14

FINEST ENGLISH HONEY, 15s. per 28lb. tin; sample, 2d.—DUTTON, Terling Essex. v 34

FOR SALE, eight dozen 1lb. screw cap bottles Light Honey, 8s. per dozen, on rail Barnack, cash or deposit; sample, 2d.—J. R. TRUSS, Ufford, Stamford. v 5

FOR SALE, 1cwt. of Granulated Honey, 56s. per cwt., free on rail; tins and crates to be returned.—TOVEY, Eastleach, Lechdale, Gloucestershire. v 19

LIGHT ENGLISH HONEY FOR SALE; sample, 2d.—W. H. LEY, Easton, Stamford. v 17

FINEST LIGHT HONEY, in 28lb. tins, 70s. cwt.; sample, 3d.—WAIN, Thorpe Bank, Wainfleet. v 13

GERMAN WAX EXTRACTOR WANTED.—TAYLOR, 137, Keldgate, Beverley. v 9

FOR SALE, 3 cwts. finest quality Scotch Honey, in 28lb. tins; sample, 3d.—GEO. W. PAISLEY, Wayside, Newport-on-Tay. v 15

EXTRACTOR, cost 24s. 6d., good order, 15s.—BRADFIELD, 31, Northland-drive, Scotstoun, Glasgow. v 6

SELL, or EXCHANGE, "Transactions of the Entomological Society of London," complete for 1908, '9, '10 '11, and '12.—HERROD, "B.B.J." Office, 23, Bedford-street, W.C. v 90

240 EGG STRAIN BUFF ORPINGTON COCKERELS, April hatched, fine birds, 6s. 6d. each; White Wyandotte Cockerel, 5s. 6d.; White Wyandotte Cock, 1911, 4s. 6d.; stamp reply.—CRAWSHAW, Norton, Malton. v 98

GOOD QUALITY HONEY, six 14lb. tins, 7s. 6d. each. — STUBBS, Rempstone, Loughborough. v 94

NINE ACRES GOOD LAND, Bungalow, every convenience, orchard, pigsties, freehold.—TRESAISON Hockley, Essex. v 83

Editorial, Notices, &c.

REVIEWS.

The Manipulation of the Wax Scales of the Honey Bee, by D. B. Casteel, Ph.D., published by the U.S. Department of Agriculture, Washington, D.C., being Circular 161, Bureau of Entomology.—In this paper the author endeavours to present a true account of the manner in which the scales of wax are transferred from the pockets of the bee to the combs. After carefully examining bees at work, he has come to the conclusion that unless accidentally dislodged the wax scales are always removed by the bee which secretes them, and in the process of removal the scale is not grasped by the so-called wax-shears, or pincers, but it is pierced by a few of the stiff spines on the distal end of the first tarsal segment of the hind leg, and is then drawn from its pocket and remains adhering to these spines until removed for mastication. By flexing the hind leg the scale is brought forward beneath the bee's body and into proximity with the mouth. In the process of mastication, the forelegs usually aid the mandibles by holding the scale in an advantageous position. As a rule entire scales are removed at one operation, although it sometimes happens that a thin scale is broken in extracting it from its pocket, or an extremely thick one is gradually bevelled off by the continued rasping of the pollen combs. Scales which are removed accidentally or which are dropped during manipulation may be recovered later and built into comb, but the recovery of free scales is usually not accomplished by the bee which secreted them. Bees which are producing wax may also re-work the masticated wax laid down by others. Producing bees may turn to the work of building and sculpturing the comb either before all their scales are removed, or immediately after this has been accomplished. There are four excellent illustrations of the manner in which the bee removes and manipulates the wax scales.

Sacbrood, a Disease of Bees, by G. F. White, M.D., published by the U.S. Department of Agriculture, Circular No. 169, Bureau of Entomology.—In this circular of five pages, the writer discusses briefly a disease which has been recognised by bee-keepers for many years as dead brood, different from foul brood. Dr. White had commenced the study of such dead brood as far back as in 1902. Eight samples labelled "pickled brood" were received by him from New York during 1902 and 1903, and on examination were found to be free from micro-organisms. These results were published in 1904. Dr. Burri, of Switzerland, in 1906, reported the examination of twenty-five samples of dead brood, and placed the results of his examinations under the headings of "sour brood," "stinking foul brood," "non-stinking foul brood," and "dead brood free from bacteria." Four of the samples contained dead brood free from bacteria and unaccompanied by other diseases. Dr. Kürsteiner, also of Switzerland, in 1910, made the same classification as Dr. Burri. This disease, which has been called "pickled brood" in America, Dr. White now proposes to call "sac-brood," because many larvæ dead of it can be removed from the cell without rupturing their body wall and have the appearance of a small closed sack. A colony badly affected becomes weakened, and the brood dies after the time of capping. Occasionally the capping has a hole through it, indicating that the capping itself had never been completed. A larva dead of this disease assumes a yellowish tint, and in decay turns brown. The contents of the saclike larvae are more or less watery. The dried scale is easily removed from the lower wall of the cell, and there is no odour perceptible. The absence of micro-organisms and the fact that the disease often disappears without great loss to the colony tends to indicate that the malady is not infectious, but Dr. White believes from experiments he has made that it is of an infectious nature, and is probably caused by an infecting agent so small, or of such a nature, that it will pass through a Berkefeld filter.

NORTHANTS B.K.A.

The annual meeting of the Northants Bee-keepers' Association will be held at the Hull Memorial Buildings, Bridge Street, Northampton, at 3 p.m., on Saturday, March 8th, to receive the report and pass accounts for the past year, and to elect officials for the ensuing one, &c. At 6 p.m. Mr. W. Herrod, F.E.S., will give a lecture, illustrated by lantern slides, on "Diseases and Enemies of Bees."

It is hoped that members and others interested will make an effort to be present.—Robt. Hefford, Hon. Sec., Kingsthorpe, Northants.

HEREFORDSHIRE B.K.A.

ANNUAL MEETING.

The second annual general meeting of the Hereford Bee-keepers' Association was held at the Y.M.C.A. Rooms in Hereford, on Wednesday, January 29th. Sir James Rankin (president) took the chair. The secretary (Mrs. H. H. Mynors) read the minutes of the last annual meeting, and presented the report for 1912. The num-

ber of apiaries visited by the experts was 138 in the spring, and in the autumn 146.

The total number of cases of foul brood reported during the year was 115; nineteen stocks badly affected were destroyed. Unfortunately, two cases of "Isle of Wight" disease were discovered in the Bromyard and Leominster districts, during the Autumn Tour, and bee-keepers are warned to keep a sharp look-out for the approach of the enemy.

The County Council allowed a grant of £10, and also gave considerable help to the Association by providing lectures on bee-culture, and demonstrations to assist candidates to prepare for the examination for third-class B.B.K.A. Certificates, held by Mr. W. Herrod on behalf of the British Bee-keepers' Association, in Hereford in the autumn.

The treasurer detailed the accounts, which showed that the receipts—including the £10 grant, the balance from 1911 of £9 4s. 8d., and a balance from the former Association of £6 9s. 11d.—amounted to £73 1s. 3d. The expenses were rather heavy, amounting to £65 10s. 10d., of which half was for the necessary work carried on by experts, leaving a balance of £7 10s. 5d.

Both report and accounts were adopted.

The officers were re-elected, and a vote of thanks to Sir James Rankin for presiding concluded the meeting.

Before the meeting was held a very interesting and instructive lecture, illustrated by lantern slides, was given by Mr. W. Herrod, secretary of the B.B.K.A., on "Diseases and Enemies of Bees"; there was a large and appreciative audience, and at the close a hearty vote of thanks was passed to the lecturer.—Mrs. E. Mynors, Hon. Sec.

SCOTTISH B.K.A.

A meeting of the Council was held in the Edinburgh and East of Scotland College of Agriculture, George Square, Edinburgh, on Saturday, February 22nd, Mr. J. W. Moir occupying the chair.

Among the items of business discussed was the question of adopting a journal to be the official organ of the Association, a small committee being appointed to arrange and carry out the matter.

A further discussion took place regarding insurance for bee-keepers against liability for damage caused by their bees, a scheme proposed being to insure for the sum of 1d. per hive, with a minimum of 6d. This scheme was unanimously adopted. Several speakers emphasised the necessity for this insurance, as they themselves had had some very narrow escapes last year.

It was arranged to hold the March meeting of Council at Dumfries.—J. L. Gibson, Joint-Secretary.

ESSEX B.K.A.

On Wednesday, February 12th, the annual meeting of the Essex Bee-keepers' Association was held in the Public Hall, Witham, Mr. W. A. Simkins, of Chigwell, presiding.

The Committee's report for 1912 regretted that the season fell short of the previous one as a honey year, and disease accounted for a number of stocks dying out. Essex had been more favoured than some parts of the country in the matter of weather, and the harvest, although small, was of good quality. The accounts showed the receipts to have been £99 16s. 10d., and there was a credit balance of £6 4s. 9d.—The report and balance sheet were adopted.

Lady Gwendoline Colvin was re-elected president. The vice-presidents were re-elected, with the exception of Mr. H. J. Elliott. Mr. J. R. Pulham was re-appointed treasurer, and Mr. G. R. Alder secretary.

In the evening a lecture was given by Mr. W. Herrod, Secretary, British B.K.A., upon "Bees in relation to seed and fruit-growing."—G. R. Alder, Hon. Sec.

AMONG THE BEES.

By D. M. Macdonald, Banff.

SELECTION.

This question confronts us in every phase of agriculture, and we find that farmers are becoming fully alive to the fact that if they are to make the industry pay, they must discard all but the best—the best cattle, horses, pigs, sheep, poultry, and the best seeds, roots, and grasses; also the best tools, implements, and appliances. In this and neighbouring counties we have the finest polled and shorthorn herds of cattle in the world, and at the annual sales of young stock held last month, buyers assembled not only from all parts of our own islands, but even from Canada, the United States, the Argentine, and also from South Africa and Australia. Very fancy prices are generally obtained, because it is realised that blood tells, and they must have the best. The same holds good in regard to horses.

I had two very interesting experiences recently worth recording. An acquaintance keeps a dairy-farm near a large city. Records carefully kept show that at the present time his cows yield him one-third more milk than they did some ten years ago, and his expenses are now about one-fourth less than they were then. How did this arise? Chiefly by selection, by constantly weeding out the worst and retaining only the best. Let a cow look ever so handsome, if she falls short in the number of gallons of milk she should give, she is discarded at any price. Feeding has also

been carefully studied, and so the forage bill is less, the dear food not being often the best milk-yielder. Careful tests show weekly, monthly, and yearly what each cow produces; there is no doubt about it, and nothing is left to chance, so the failures and the semi-failures have to go, selection leaving only the best.

A poultry-keeping friend told me much the same tale the other day. Careful records are kept of the egg-laying powers of the different breeds. Then tests are made of the groups of each breed. Only the best are retained. After years of patient trials, only a few breeds are kept for laying, and only the best of these. The percentage of increase appeared to me to be marvellous. And his profits are still further enhanced, because his "setting" eggs are sold at ten times the price common eggs fetch on the open market. The birds he breeds for sale fetch fabulous prices at times, and the lowest price he mentioned appeared to me to be high. All this is again the result of weeding out, with careful selection and breeding only from the best.

The lesson taught by the above facts should be taken to heart by the bee-keeper. He, too, should be constantly weeding out all inferior queens—not the failures alone, but the mediocre, the fair to pretty good, and even the good. He should be content only with the best. His opportunities of testing his queens are as good as the dairyman's or the poultry-keeper's; even better, because returns are always before him, and he can in a single season increase manifold from his best queen. Hitherto, bees have been bred too much for their face value, for colour or good looks, and the result is that we have been getting softer bees, workers less hardy, less industrious, and less gentle in handling. Yes, we have been breeding bees less able to resist disease or throw off its effects. We have been getting bees more irritable, more nervous, and shorter lived. Strains of yellow bees, or bees tainted with that blood, are becoming far too common, and they are returning their keepers less honey and that of a poorer quality, while they cap wretchedly and finish off badly. I have seen them in a fairly sized apiary yield sections so irregularly capped, so unevenly finished, and with so many pop-holes and empty corners that not six out of six hundred were fit for the show-bench. A fact! This strain has been converting our fine old race into a set of mongrels in many parts of the country. Only a wholesale slaughter of these weeds and a requeening with mothers of decent breeding will restore matters to the degree of semi-perfection we could boast of even a few years ago. And the worst of it is that these poor weeds are tainting the apiaries of even those bee-keepers who would not have them at any price. I would that we might have a war of extermination, but as we can't, I would advise all right-minded bee-keepers to enter on a crusade of weeding out, and then by careful selection and breeding from the best aid in securing a better race of bees.

I think, too, at this critical time Government experimental apiaries, especially queen-breeding ones, would do a world of good in aiding our bee-keepers to get a better bee. Such apiaries are maintained by the governments of several of our colonies, where queens are reared under the most favourable circumstances and from the best strains, to help the bee-keepers and add largely to the returns from the industry. The B.B.K.A. should not lose sight of this important means of raising the status of our industry. Isolated effort in exterminating the mongrels may do good to a slight extent, but too often it fails just because an apiary of these weeds are within flying distance when our queens go out to mate. The evil requires to be grappled with on an extensive scale, and what would be best is a national movement on definite lines.

Correspondence.

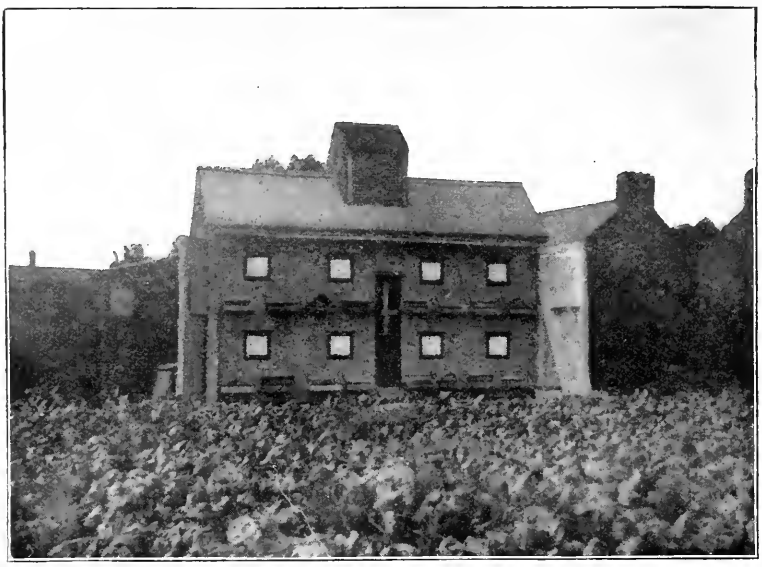
The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BEES AND FERTILISATION OF FRUIT.

[8682] I have recently come across a report of papers read at a meeting of "The National Fruit Growers' Association," on the subject of "The Cross Pollination of Fruit Trees, and the Importance of Bees." This is reported in the "Fruit Grower, Fruiterer, Florist, and Market Gardener," for February 29th, 1912. In this paper Professor Theobald stated that "he had once recorded the number of bees which visited fruit blossoms, and had found that 90 per cent. of them were wild bees. There was a good crop of fruit in the Isle of Wight last year, although the hive bees had been practically exterminated. Pollen carrying by wild bees, which existed all over the country, would go on even if all the hive bees were exterminated, and there was nothing to fear so long as the disease did not affect these wild bees." This is directly contrary to what I have understood, which is to the effect that the fertilising of fruit trees is mainly

accomplished by hive bees, as at this early part of the year the wild bees are not numerically strong. I know that at many of the fruit farms numerous stocks of bees are kept for the purpose of pollination, and have heard of a part of England where, the hive bees dying out, it was found necessary to bring in more, owing to the poor setting of the fruit. In the "A.B.C. of Bee Culture," numerous authorities on horticulture are quoted from as believing in the necessity of the hive bee to fruit growers, and an account is given of evidence given by the late Mr. Pringle before a committee of the House of Assembly, Ontario, on the subject. In his evidence Mr. Pringle stated that "The horticulturists with one single exception admitted the valuable and indispensable offices performed by the honey bee in the fertilisation of fruit bloom." I should be glad if you will inform me on this matter, which appears to me an important one to the craft. Thanking you in anticipation.—H. H. Brook.

[The statement to which you allude is contrary to facts which have now been well established. One observation such as that mentioned is of very little value, as it has been clearly demonstrated that the pollination of fruit trees is mainly dependent on the honey-bee. In numberless instances it has been shown that where honey bees were scarce pollination was imperfectly carried out and fruit trees yielded little fruit, and on the introduction of bees results were just the reverse. Our own observations, which have now been carried out for more than thirty years, prove that fruit trees depend on the honey-bee for pollination, and at the time of flowering there are at least twenty honey-bees flying to one of any other insect. We have seen fruit blossoms crowded with honey-bees when there was hardly one wild bee on them. The statement that there was a good crop of fruit in the Isle of Wight last year is of little value, as although a great many bees have been exterminated by disease, there have always been colonies of bees on the Island; besides, fruit growing is only carried on there to a very small extent. There are not enough wild bees in the country for fruit growers to depend on them, and as they are subject to the same diseases as domesticated bees, their increase is prevented automatically. Wild bees can never become sufficiently numerous to be of service, because they have numerous enemies that keep them down. The fact that fruit growers keep bees for the purpose of pollination is good evidence of their utility for this purpose. If you will refer to "B.B.J." for October 14th, 1909, you will see what evidence was given by the chairman of the B.B.K.A. on the "Beneficial results from the fertilisation of Fruit Blossoms by Bees," directly opposed to the theory of Professor Theobald.—Eds.]

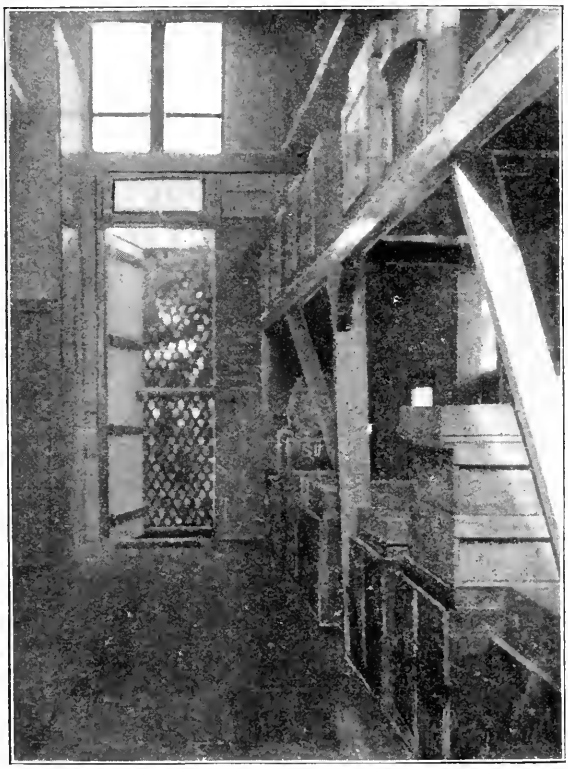


BEE-HOUSE HOLDING SIXTEEN STOCKS.

KEEPING BEES IN A BEE-HOUSE.

[8683] Some of your readers may be interested in the following description of my bee-house. First of all, I may say that I

formerly had my bees in ordinary frame hives in a corner of a large garden near the main street of our village. I kept to the native bee for some time, then afterwards introduced Italian hybrids. Certain stocks of the latter proved more irritable than the natives, so being close to a thoroughfare, as previously stated, I was afraid of people being stung when I was manipulating, and having read a good deal about bee-houses in the United States, and also of one or two in this country, I decided to construct one on scientific lines, so as to enable me to keep my bees under more control, by having all under cover. I obtained the assistance of a local carpenter, and together we constructed the framework of the bee-house shown in the photograph, and I gradually completed the whole structure. The house is 20ft. by 7ft. by 9ft. high to the wall-plate, inside measure; this, with the space afforded by the roof, gives me ample room for all manipulations. Efficient ventilation is provided by the lower ventilator built in the roof, and also by end and side ventilators. The eight small windows seen are placed between the tops of every two hives, of which sixteen are contained in the house, eight on the floor, and eight 4ft. from the floor on strong racking, all being set straight by means of a spirit level. I formerly used the ordinary "W.B.C." standard brood-chambers, but have replaced these by a double-walled hive containing the brood-chamber and an ordinary shallow super sliding under the same. This constitutes an efficient non-swarming hive. The hives are supered as shown in photograph of the interior, but as the honey season was over when the pictures were taken, most of the hives appear as the bees are wintered in them, being covered up with nothing but the shallow rack, shown on each, filled with clean and disinfected wheat-chaff. This remains on the hive all the year round. There is an extended shelf fitted 12in. or so under the wall-plate inside, barely seen in the photo, and this is used for wintering spare queen bees which one may have over in autumn after requeening stocks below. With proper packing away at that period, fertile queens may be wintered in fairly strong nuclei on the shelf provided. I have made porches of different appearance, so that no two are alike within a yard or so of each other, and each is painted a different colour. By this precaution virgin queens, when flying



INTERIOR OF BEE-HOUSE.

in mating time seldom enter the wrong hive, so susceptible are bees to colour, &c. When manipulating in the house the bees seldom sting, as they are usually occupied in finding a way out at the windows. I seldom have occasion to open these windows, as exit for the bees is provided at the bottom of each, as the glass does not reach the bottom by ½in. to ⅝in. The most surprising part is that after the bees have made their exit under the glass a few times, they seem to make for that point immediately the hive is opened. Bees kept on the system I use, start earlier in spring, do not consume so great a quantity of stores, while it also enables one to introduce queens under perfect conditions, especially if the weather is inclement in August, the month when the greater number of queens are deposed. Then, in extracting time, one has his appliances close at hand for that purpose, there are also cupboards not shown in the photograph of the interior, in which to store surplus combs away from the wax-moth. The lean-to shed on the left hand outside the house is used for several purstove; secondly, a honey-ripening room; as it is quickly brought to the heat required for that purpose by means of an oil-stove; secondly, a honey-ripening room; thirdly, a storehouse in the quiet months for various appliances. Space now requires me to bring this article to a close, or I could give the readers of your useful and valued paper many more details of the successful management of bees in a bee-house.—J. S. Chawner.

ROSS-SHIRE NOTES.

[8684] *The Roll Call.*—My bees have come through winter without loss, and are flying strongly on favourable days, while the increasing warmth of the quilting shows that brood-rearing is under way. I had a look into one nucleus lot, and saw the queen parading over her first-filled comb of eggs. A rapid examination showed ample stores and bees fairly numerous, so little or no attention should be necessary until May.

The other day I was called in to examine a supposed case of bee disease where ten colonies had been suddenly reduced to three. However, neither foul brood or the dreaded bee-paralysis were to blame. It was the sadly common trouble of insufficient winter stores, intensified by feeding with burned sugar syrup. There must be many similar cases where bees were neglected in autumn, and may now be perilously short of food.

Where stored combs are available they should be given to needy colonies, or warm syrup can be fed rapidly in sufficient quantity to last a few weeks.

Bee Paralysis.—This subject is becoming quite a debatable one in these columns, and much ink is being shed over what is virtually a life and death matter to the inmates of the hive—but while we argue the little people die.

Either bee-paralysis is curable or it is not. Mr. Simmins is confident that the disease can be got under, and, personally, I prefer to believe him rather than the pessimists who merely take their cue from the Board of Agriculture. The actual cure, however, is a relatively simple matter compared with the difficulty of securing subsequent immunity for the rescued colony. For instance, Mr. Alex. Muir, Kirkcowan, two years ago had his 100 colony apiary rapidly reduced to two or three, and saved the remnant by sulphuring the adult bees and putting a healthy driven lot on the naked brood. Encouraged by this success, the owner again extended the apiary to its former size.

Last year disease broke out anew and again completely destroyed the entire apiary. Pessimists may think this bitter experience conclusive as regards the hopelessness of fighting bee-paralysis, but such is by no means the case. I have had some correspondence with Mr. Muir and he now recognises his mistake in making a fresh start while surrounded by diseased bees in other people's apiaries. Mr. Muir has started yet another apiary of twenty stocks eleven miles away, with the intention of taking them home when the disease had run its course. This end is now attained, as I understand there is not a living stock left in the district.—J. M. Ellis, Ussie Valley.

MEASURING POLLEN GRAINS.

[8685] With reference to Mr. Hayes' interesting paper on the study of pollen grains (p. 82), may I make a few suggestions?

There is another method of measuring microscopic objects, somewhat on the same principle as Mr. Hayes' camera method. An eye-piece micrometer (which is a glass disc ruled with parallel lines, cost about 4s. 6d.) is placed in the eye-piece, resting on the diaphragm, the micrometer slide is placed on the stage of the microscope, and we then ascertain how many divisions correspond to one division of the eye-piece micrometer. This is sometimes rather troublesome when the divisions do not exactly correspond, but once it is done, we have a measure always at hand, as the lines on the eye-piece micrometer are always in focus, and appear superposed on the object examined. The one disadvantage is that if the divisions of the micrometer do not happen to be equal to a whole number of divisions of the micrometer slide, a small calculation

is necessary in order to find the dimensions of the object; but this is, in my opinion, more than counterbalanced by the advantages of the method.

The best method of measuring, however, is by means of an Abbé camera lucida. This is used with the microscope vertical (or inclined, provided the drawing-board is inclined at exactly the same angle), and is most useful for both drawing and measuring. The cost is about 30s. for the simplest form (which is quite satisfactory).

To those interested in the study of pollen, who can read German, I can strongly recommend Dr. Hugo Fischer's *Beiträge zur vergleichenden Morphologie der Pollenkörner* (Breslau, 1890; price about 4s. when obtained through a London bookseller). It gives much information as to methods of examining pollen, and also a description of the chief features of the pollen-grains of a large number of natural orders of plants.—ANNIE D. BETTS.

THE BEE IN THE SYRUP.

[8686] Several correspondents have mentioned lately the effect of immersing a live bee in liquid, and it reminds me of what I saw once or twice at syrup-feeding time last year. The rapid feeder was nearly empty, and a bee or two were down at the bottom sucking up the dregs when the fresh supply was poured in. This, rising in the well, sometimes completely immersed a bee and stood half an inch above it, but she would go on feeding until her crop was full, just as comfortably as though she had been in the open air. Then she would climb out like a newt walking out of water, and go off to put her honey in store. I put this feat down to a sort of Christian Science, preserving the insect from the action of natural laws through the intense occupation of her mind. It is like the case of a small bird, such as the gold-crest that under the impulse of migration, flies a distance that everyone would say beforehand was impossible for such tiny wings. —G. G. DESMOND, Sheepscombe.

MR. C. HEAP AND *NOSEMA APIS* (?)

[8687] In "B.B.J." of Feb. 20th (p. 75), I find Mr. Heap is still labouring to prove a point which he might have demonstrated by less than five minutes practical application of a simple experiment; and the result would have broken down his several theories.

I can only repeat that the bee has no covering impervious to the treatment I recommend, and apart from recuperative manipulation, I have offered to prove by practical demonstration under his own hand, that any parasite within the body of the bee can be reached by a combination of three courses I have already explained—by internal and external application, in addition to volatile action by means of the air vessels.

As this is the only way by which I can reply to Mr. Heap's proposition, I regret he declines this opportunity of giving him the only chance of proving my statements to his own satisfaction.

Mr. Heap's reply as to the period to be chosen, compels me to add that which I did not consider it necessary to mention in my last, and that is, part of the treatment to be followed would consist in sending the operator one or more young queens; and these would not be available until May. I should also like to show how to operate by dividing or swarming, which could not be done earlier.

Personally, I should not mind anything about the period treatment commenced, if I could be on the spot; and furthermore I should like to impress this fact upon Mr. Heap—the process I proposed to carry out from May (not June as he quotes me) would not be considered by *myself* as satisfactory, unless it did certainly carry the stock through at least a second season, so that the winter and spring periods should be included.

No cure, however beneficial, can be permanently effective where carelessness in other directions is allowed; hence Mr. Heap's jibes at my hint of the necessity of taking certain precautionary measures appear to be very much out of place, as it is largely because of neglect in this direction that so many people have lost their bees. I don't quite know why he dwells so much upon certain volatile substances which cause injury to bee-life, while he ignores many others that certainly do not; and it is a fallacy to imagine that the Isle of Wight parasite may not be disposed of without using a germicide powerful enough to destroy the bees of a colony at the same time.

On several points Mr. Heap is silent. He gives us no information as to the variety of bees he used, nor the plans adopted as regards ventilation and feeding, with the stocks he lost.

I can assure my friend he is quite wrong if he thinks there is any doubt in my own mind as to the success of the treatment I offer. Had I told him it was "absolutely impossible" to lose a stock in winter when properly prepared, I am quite sure he would have had more objections to raise than he has over the more moderate term "almost impossible," and which I used intentionally, that I might not appear to be too hard upon him, and others who have needlessly lost many stocks by the Isle of Wight trouble.

So Mr. Heap thinks this kind of paralysis is not infectious after all. Then

what are we all bothering about? I will at least say this much: I certainly do not consider it is infectious in any mysterious manner, such as many have imagined to be the case.

With regard to *Nosema Apis*, while this parasite does not appear to have been proven to be the source of "Isle of Wight" disease, I am not yet in a position to state what is the definite origin of the malady. Time may disclose the actual enemy; but in the meantime I am prepared to show how bee-keepers generally may wear out the plague.

Now that Mr. Heap declines to carry this discussion to a practical conclusion, nothing more can be said, but I am still prepared to cure any case that may be conducted under the supervision of some practical bee-keeper, any expert, or Bee Association that may be regarded as an "independent authority."—SAMUEL SIMMINS.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

A Fly in the Ointment (p. 57).—Let us hope that the insect will prove to be only a bee in honey, and that it may be rescued before its tracheæ are hopelessly clogged and the honey spoiled. So that it may go once more about its business, and the bee-keepers of Staffordshire unitedly enjoy the sweet for which their country is well reputed.

How to Recognise Old Bees (p. 63).—I wish that Mr. Herrod would tell us how to make old bees recognise us, and our well-meant efforts on their behalf.

Hive Ventilation (p. 65).—Mr. Scrope-Viner's floor-board ventilation is a good thing, but it is not handy to have to open the hive to remove the closing shutter. Perhaps a better arrangement is that devised by Mr. George Thirlwell, of Boston Spa, who cuts the hole as described by Mr. Viner, nails a piece of perforated zinc *over* the hole, and hinges the removed piece below with a piece of leather, fastening it with a simple turn-button of wood. There is thus no recess for the accumulation of dirt, and the shutter can be operated in a moment.

Antagony (p. 66).—Mr. Smallwood makes me feel rather like an unfortunate schoolboy, whom he has chastised with one of his tag ends, *in flagrante delicto*, as he happily puts it. He, on the other hand, poses in classic attitude as a conqueror who has just delivered a telling blow on the "conk," *in flagrante directo*, as he might say. I am not insensible of the compliment with which he tones down his wigging, undeserved though I believe it to be, and willing as I should be to return it. But, delightful as Mr. Smallwood's assimilations are, they sometimes give the impression of hasty mastication and incomplete digestion. Having said so much, I admit that my suggestion was badly expressed, as it was not intended to be an assertion, as he appears to think, and as he will find upon careful reference. My intention was to get him to refer to the book itself, to which I had not access. This he has done, only to repeat his belief. A Scottish correspondent has very kindly written me, pointing out that the "frame" is really an inner body-box to which the whole of the combs are attached, the hive itself being, as may be seen from the illustration on page 86, of the Stewarton type. Here the pins are clearly shown, and they could not support such a frame as Mr. Smallwood intends.

Germicides and Disease (p. 76).—I am not sure that Mr. Heap is upon sound ground when he compares the action of sulphur fumes with that of a volatile germicide. It is true that he assumes both to be directed at "spores." But in the case of the live bee it is the active germ which is attacked. This is a consideration entirely apart from the appropriateness of a remedy, and the fact that there are natural agents at work in the endeavour to overcome the enemy is too often lost sight of in such comparisons. Thus a remedy might not actually kill a disease germ, but might so devigorate it as to enable the friends of its host so to do. Laboratory experiments alone are insufficient, and analogy is often misleading. In the February *English Review* a similar oversight is made by Henri Fabre, who ignores the machinery of the maggot continuously at work producing pepsine, which digests its food. He therefore argues, wrongly I think, that the pepsine must be ultra-potent. It is so difficult for us to form absolute conclusions when dealing with kindred matters, that I cannot but sympathise with Mr. Simmins' somewhat guarded expressions.

Queries and Replies.

[8601] *Sending Bees by Rail.*—I recently had two stocks of bees sent me from Essex. They were in ordinary "W. B. C." hives and weighed just over 100lbs. each. The distance was just over 100 miles. The carriage charged was 5s. each, ordinary parcel rate passenger train. I should esteem it a favour if you would give me your opinion about the price. Could they not have come by some special rate? Thanking you in anticipation.—S. C. S., Thanet.

REPLY.—The charge is about right, as there is no special rate for bees. Cost of carriage could have been reduced by sending the bees in travelling boxes and the

hives by goods train. The weight of the hives was evidently counted as bees.

[8602] *Removing Supers at Out-apiaries.*—If you can find space in the "B.B.J." for the following I shall be very much obliged. I have about twelve miles distant a small out-apiary of some dozen hives, which I work entirely for section honey. My difficulty is that during the busy season I am only able to visit them about once a week, and consequently super-clearers are not of much use to me. I have tried several methods of taking the sections, but none of them very satisfactory. Probably some of your readers are situated as I am; if any of them will kindly tell me how they manage I shall be most grateful.—R. S. H., Essex.

REPLY.—If you cannot manage to use super-clearers (we see no reason why you should not do so) the only plan you can adopt is to lift off the super, carry it some distance away, and clear it of bees by taking out the sections one by one and brushing off the bees.

[8603] *Robbing in Spring.*—Some weeks ago I noticed quantities of dead bees outside one of my hives, and on mild days there seemed to be fighting. On looking into the hive the stock seemed strong, and a frame of honey was given; but more dead bees still appear than in other hives. A week ago I found fighting at another hive, with a large heap of dead bees, and though the cold winds have checked the bees flying so freely a fresh heap of dead has accumulated. It has been too cold and windy to open this hive. What would you advise me to do? The bees began the winter with abundant stores, but they have been so active on account of the mild season that supplies are probably getting exhausted. Would it be safe now to unfasten the quilts and give candy? What is the lowest temperature (given a calm day) at which this can be done without risk of chill? I should also be much obliged if you could tell me at what temperature it is safe to transfer the frames of brood into clean hives in the spring? None of my stocks were transferred last season, and I suppose they ought to be done this year.—A. D. G., Cambridge.

REPLY.—You should put on candy at once. This can be done any day at this time of year without injury to the bees. To transfer the bees choose a day when they are flying freely, no harm will then be done if the operation is carried out quickly. You need not be concerned about your honey, it will fetch a good price later on.

[8604] *Transferring from Skeps to Frame-hives.*—I lost my stocks this winter and propose to re-stock during March by purchasing some skeps of bees. (1) Do you advise driving the bees straight into the hives or transferring gradually by placing the skeps above the hives. If the latter, how long should they remain in order to hatch out the young brood? (2) I have always made a practice of medicating all food with Naphthol Beta, and leaving napthaline balls in the hives, as a precaution against foul brood. Before re-stocking, I propose to paint the inside of each hive with Ayles' "Isle of Wight" disease cure. Do you advise this, or is it necessary to discontinue the Naphthol Beta treatment? (3) Can you tell me which is the nearest County Association and the Secretary's address?—L. J. W., Doncaster.

REPLY.—(1) Place the skeps over the frames for transferring, as you suggest. Then, when brood is found on the combs in brood-chamber, make sure the queen is below, and put on an excluder. In three weeks the skeps can be taken off and driven, as all the brood will have hatched. (2) You can paint the hives with the remedy and still continue medicating the food. (3) The Secretary of the Yorkshire Association is Mr. W. E. Richardson, Whitkirk, Leeds.

[8605] *A Lost Stock.*—In May of last year I purchased a prime swarm on ten frames. Early in July I was surprised to find a swarm on my garden hedge, but as there are several colonies of wild bees in the vicinity I concluded it had come from one of these, and hived it. Both lots appeared quite well through the summer. I fed the original hive a little before packing down for winter, and have looked inside several times since, the last occasion being about a fortnight ago. On opening last week, I was amazed to find the bees gone. There were about a dozen dead bees on the floor, and frames contained a fair amount of stores. They had no objectionable smell, but contained a good deal of the bees' cleansings. Did the swarm issue from my own hive, and have they again "joined forces?"—W. S. H., Notts.

REPLY.—It is quite probable that it was your own bees which swarmed. The virgin was probably lost in mating, and, of course, the stock dwindled.

[8606] *Telling the Bees.*—I shall feel greatly obliged if you can help me by your advice as to my bees. I have had six stocks; the one from which the bees I send you came was very strong last autumn, but I lately noticed a lot of them dead on the alighting-board, while others, to all appearance, were dying from dysentery. These are all dead now, leaving only a few dozen in the bottom of the hive. There are plenty of stores. Another stock, which I got from a farm-house three miles away three months ago, was also very strong, with plenty of stores

too, and I also gave them a 2lb cake of candy; things went on all right until a fortnight ago, when we had a death in the family. I was advised to tell the bees about it, which I did, leaving this one untold (a fine strong lot) which I said would prove if there was any truth in it or no. To my surprise when I looked again the bees in that one hive were all dead, and all the others are still all right. I do hope I am not giving you too much trouble, but I should like your advice, as I have gained many useful little hints through you and the BRITISH BEE JOURNAL in the past. Can the candy from the dead lot be given to another hive?—ESSEX BEE-KEEPER.

REPLY.—We thought the old superstition of "telling the bees" had died out. Your action in not telling the bees had nothing to do with their death. Both stocks died through "Isle of Wight" disease. Do not use the candy but burn it together with the combs and all movable parts in the hives, and disinfect the latter by scorching with a painter's spirit lamp.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

F. M. (Tharner).—*Transferring Bees.*—(1) Leave the transferring until your return, it is too early to do this now. (2) About the middle of April is quite soon enough to stimulate in your district. (3) Write to the Secretary of the Yorkshire B.K.A., Mr. W. E. Richardson, Whitkirk, Leeds. (4) The death rate is normal.

S. ANTHONY (York).—*Bee-food.*—The sample you send is not candy, but syrup. It has been made from unrefined moist sugar, and this, together with the fact that it is burnt makes it quite unsuitable for bee food.

L. M. L. (Blyth).—*Starting Bee-keeping.*—Write to Captain Sitwell, Yearle House, Wooler, the hon. secretary of the Cheviot and Tweed Borders Bee-keepers' Association. He will put you in touch with a bee-keeper who can help you.

W. H. C. (Worcester).—*Preparing for the Show-bench.*—(1) The grading glasses are 1s. 2d. post free from this office. (2) Fluid ounces. (3) It would not be detrimental to the queen for the sun to shine on her during inspection of frames. What is meant is that when she is enclosed in a glass-topped box, such as is used at shows, she might be killed by the heat of the sun if exposed under such conditions.

W. B. CLARKE (Tewkesbury).—*Arranging the Apiary.*—Place the hives in a row along the hedge next to the lawn, and they will then face S.E. You could stand six hives along this 50ft. side at equal distances apart.

Suspected Disease.

F. A. W. (Devon), F. (Carlisle), R. A. (Bath), COTTAGE ROSE (Glos.), A. S. (Thorpe).—The bees have died from "Isle of Wight" disease.

M. H. (Carshalton).—The bees are ordinary British bees, and have died from "Isle of Wight" disease.

L. M. (Surrey).—It is "Isle of Wight" disease. Destroy the stock at once.

J. T. (Colstock).—It is useless sending bees in an envelope. You should pack them properly, so that they can be delivered, without crushing. Those sent were smashed to pulp, so we cannot answer your questions.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

CAN anyone supply Raynor-pattern Bottle Feeders, with screw caps.—R. MASSAM, Normanby-by-Spital, Lincoln. v 26

HIVES, new, painted; exchange for fowls or choice fruit trees, standard or bush.—104, Grosvenor-road, Harborne, Birmingham. v 22

OWING TO DEATH.—A few healthy Stocks left, in good frame hives, at 20s. This offer will not be repeated.—LEECH, Newland Park, Hull. v 24

TROPHY STAND, complete, £2 10s.; Polished Show Case, with wax, 15s.; particulars.—ANDREWS, Rock-rd, Millfield, Peterborough. v 23

WANTED, strong stock English Hybrid Bees, healthy, and safe delivery guaranteed.—HORBURY, Stanwell, Middlesex. v 25

FOUR W.B.C. HIVES, new 1912, 10s.; three Standard, 7s. 6d., guaranteed clean.—CYCLE WORKS, 21, Locking-road, Weston-super-Mare. v 27

WHITE ORPINGTON EGGS, 2s. 6d. per sitting; 3lb. Beeswax, for 4s.—MRS. AVERY, Deverill, Warminster.

SEVEN DOZEN screw cap nominal lb. jars finest Honey, W.B.A. label, 9s. 6d. per dozen.—BALDWIN, Underley, Tenbury. v 20

20 SECONDHAND HIVES, nearly new, all one pattern (Garner's), healthy, 5s. each.—POSTMASTER, Haconby, Bourne. v 21

"QUEEN REARING IN ENGLAND."—Two copies of above book (now out of print), slightly soiled 1s. each.—"B.B.J." Office, 23, Bedford-street, Strand.

Editorial, Notices, &c.

BEE DISEASES BILL.

With respect to the withdrawal of this Bill, we stated on February 13th, that owing to the congestion of business in Parliament the Government had decided not to proceed with it, but that it would be introduced again when Parliament met. This decision did not surprise us, as anyone could see that the Government had already important measures in hand, and it was a foregone conclusion that such a small industry as bee-keeping would have to give way to the larger interests affecting the country. There is, however, nothing lost by the delay, which may be a blessing in disguise, as it will give an opportunity for considering some of the amendments which were introduced. Most of them are small and unimportant, referring principally to the wording, and none of them other than could have been carried out by the Board of Agriculture by such orders as they might have found expedient to make. To lay down hard and fast rules in an Act of Parliament has been found not to be the best way, and we have a glaring instance of this in the Irish Bee Pest Prevention Act, which gives the Irish Department of Agriculture no power to deal with any other disease than foul brood, so that their hands are paralysed in the presence of "Isle of Wight" disease. Although, when consulted the Department did not wish it to extend to Ireland, during its passage it was seen that Mr. Runciman's Bill conferred privileges on bee-keepers in this country and Scotland which they did not get in Ireland. The vice-president of the department, Mr. T. W. Russell, in order to enable them to deal with other diseases, tabled an amendment extending the provisions of Mr. Runciman's Bill to Ireland, in so far as their legislation did not cover them.

The new clauses proposed by Mr. C. Bathurst refer to separating diseased colonies from others not affected, and compulsory notification, but as both of these would have been dealt with by orders of the Board of Agriculture, it does not much matter whether they are included or not. A clause proposed to be introduced to which objection would be taken is that relating to no bee-keeper being allowed to keep bees except in a properly-constructed frame hive, after the expiry of five years from the passing of the Act. This, of course, should and would be strongly objected to, because the time for it has not arrived, and it would prevent a very large number of small cottagers from keeping bees at all. These have neither the time to attend to, nor the money to spend on, frame-hives, and in our experience there is more danger from neglected frame-hives than from skeps, in which, under ordinary treatment, the combs are constantly being renewed, and old ones melted down, thus destroying any disease germs that may be in such combs. That inspectors should be duly qualified for their particular work goes without the saying, but that "a bee expert" should be substituted for "an expert adviser" would preclude the scientific experts on bee diseases of the Board of Agriculture from being called in if necessary.

Now, as the new session of Parliament has commenced, if progress is to be made with legislation, all associations should at once follow the example of those that have already passed resolutions regretting that for lack of time the Bee Diseases Bill has been withdrawn, and urge upon the President of the Board of Agriculture and Fisheries the necessity of re-introducing it and passing it early this session. The Parliamentary Committee of the B.B.K.A., as also the Diseases of Bees Committee will no doubt watch the interests of bee-keepers in alterations that may be made in any Bill introduced. This committee consists of twenty-five of the leading bee-keepers in the country, and is as representative of the interests of the industry as it is possible for a committee to be. It would be a good plan for every bee-keeper who takes an interest in obtaining legislation to write in a similar manner to the President of the Board of Agriculture, as also to his M.P., and urge him to support the measure in Parliament. It is important that these letters be sent without delay. The few who oppose say there is no demand for legislation, and it is for bee-keepers to convince the Government that there is a demand, and thus strengthen the President's hands.

REVIEW.

Vosk, ievo istoria, dobivanier, falsifikatzia ea torgovoye znatchenier, by T. W. Cowan, translated by P. Ditiakin (published by A. F. Devrien, St. Petersburg, price 1 rouble or 2s. 2d.).—This is a second translation of "Waxcraft" into Russian, the first edition of which, translated by A. C. Kandioff appeared in 1911. The present edition has been considerably enlarged, and has also a large number of notes which the translator has introduced for the benefit of Russian readers. Six pages have been added to the historical chapter which show the antiquity of bee-keeping in Russia, and deal with the history of wax production and its employment in that country, more especially in the ceremonial use of candles. Quite a number of works dealing with the subject

are mentioned. To the chapter on Beeswax in Commerce ten pages are added, giving particulars of the wax production in Russia, the amount and value from 1802 to 1909. At one time, the country exported a large amount of wax, but has now to import it for her own requirements. Improved methods of bee-keeping have militated against wax production. It is stated that 13 per cent. of the hives now used have frames, *i.e.*, 670,000. For the manufacture alone of candles for religious purposes, an enormous quantity of wax is used, and it is also every year in great demand by bee-keepers for foundation. To give an idea of the amount of wax used for making candles, statistics are given from 1850 to 1897. In the former year there were eighty-eight factories using 27,908 poods of wax, and in 1897 there were 203 turning out 397,600 poods of candles of the value of 10,880,000 roubles (£27,200). Besides importing refined wax, Russia also imports a large quantity of candles, notwithstanding the number of factories making them in the country, so that it will be seen what an important commodity wax is in the country.

CHESHIRE B.K.A.

The annual meeting of the above Association was held in the Grosvenor Museum on Saturday, February 15th, the Rev. T. J. Evans, of Rock Ferry, presiding over a large attendance. The hon. secretary, Mr. E. W. Franklin, Mouldsworth, read the report of the committee, which stated that the condition of the Association was most satisfactory, and showed a large increase in the number of members. The number of new subscribers during the year was seventy-one, and as only twenty-four were lost through resignations and death, there was a net gain of forty-seven, making the total membership 338. They thanked the local secretaries for their assistance, especially Mr. H. H. Brook, Miss L. Brooks, Mr. Bradburn, and Mr. Newstead. The committee still felt that some districts were not so fully represented in the Association as they should be, and urged local secretaries to use every effort to induce all bee-keepers to become members. The expert work was again carried out by Mr. Job Astbury, of Kelsall, and Mr. H. Barlow, of Newcastle-under-Lyme, and they together visited in the spring 314 apiaries and examined 1,016 stocks. The committee regretted there had been considerable outbreaks of "Isle of Wight" disease in the county, and as no certain cure was known, they had been able to do very little for members whose bees had been affected by it. Their efforts had therefore taken the direction rather of checking the spread of the disease, and whenever a case was heard of, a competent bee-keeper was appointed to watch it, and if badly affected, to see that the stock was destroyed. The Cheshire County Council had again made the Association a grant of £20, and this enabled them to send the experts round again during the autumn to visit all members who had disease in their apiaries, and deal with affected stocks, especially with a view to checking the spread of "Isle of Wight" disease.

The hon. treasurer, Mr. E. Percy Hinde, submitted the balance-sheet, which showed a balance in hand of £20 14s. 3d.

The Chairman, in moving the adoption of the report and accounts, referred to the work of the hon. secretary and hon. treasurer. He said that "Isle of Wight" disease had decimated many stocks in the county, and he trusted some means could be found of checking its ravages, if not of curing it. Four candidates had presented themselves for the second class certificate, and all passed. The report and accounts were adopted.

The Duke of Westminster was re-elected president, and the following vice-presidents: The Marquis of Crewe, Earl of Haddington, Lord Sheffield, Canon Armitstead, J.P., Colonel Dixon, J.P., Major Thorneycroft Vernon, Mr. J. A. Reiss, Mr. G. H. Garratt, with the addition of Mr. H. Barnston, M.P. The members of the committee were re-elected with Mr. Harris, of Lostock Gralam, and Mr. H. H. Brook, of Altrincham, in place of Mr. J. A. Bally and the Rev. E. A. Hutton. Mr. T. D. Schofield and Mr. G. H. Garratt were re-elected delegates to the meetings of the British Bee-keepers' Association, and Mr. John Tonge, Manchester, as hon. auditor.

A discussion took place with reference to a Bill which is being promoted in Parliament to deal with the problem of bee disease. The chairman stated that the Bill had been dropped for this session, but he thought it would be re-introduced.

Mr. W. Herrod, secretary to the British Bee-keepers' Association, said the Bill had passed the first and second reading, and was in grand committee. He suggested that a resolution be passed urging the Board of Agriculture to use every endeavour to get the Bill re-introduced during the coming session, and that copies should be sent to Mr Runciman and the local members of Parliament. He was convinced, after twenty-five years' experience of travelling in nearly every county, that bee-keeping would not succeed in this country until they had legislation.

On the proposition of the Chairman, a resolution to this effect was passed.

At the conclusion of the meeting, Mr. Herrod gave an instructive lecture on "Queen Rearing," which was illustrated with lantern slides.—E. W. Franklin, Hon. Sec.

THE CHEVIOT AND TWEED BORDERS B.K.A.

ANNUAL MEETING.

The annual meeting of the above Association was held at Wooler on the 24th ult., a meeting of the Alnwick and Warkworth Branch having been held previously on the 21st at Alnwick. This was done to enable members to take advantage of the opportunity offered by the B.B.K.A., who sent Mr. Herrod to give two lectures in the north, and the chance was eagerly taken advantage of. Both the lectures were fully appreciated, and the results will, I am sure, be seen in the near future. Mr. Herrod describes his subjects so lucidly, while his lantern slides are so excellent, that one of his lectures is practically a demonstration. We all know an hour with a practical bee-master is worth days of reading, so we must be dull indeed if this season our apiaries do not show all-round improvement, as we apply for ourselves some of the simple rules that we heard expounded.

That the area of the Association seems likely to be greatly extended, which may necessitate a change of name, but vastly increase its usefulness, was a piece of news that was received with great pleasure. The funds were in good order; with the prospective growth of the Association it was hoped and anticipated that the grant from the Northumberland County Council might also be increased.

The president and vice-presidents were re-elected *en bloc*. There were sundry changes on the Committee, while the rules had to be slightly altered to meet the growth of the Association, vice-presidents, local secretaries, and experts being added as *ex-officio* members to the Committee. The Rev. J. G. Shotton's resignation as hon. secretary was received, and he was voted grateful thanks for his work and interest while holding that appointment. Captain Sitwell resigned from chairman of Committee and was elected hon. secretary vice Rev. J. G. Shotton.—F. SITWELL, Hon. Sec.

BEE-KEEPING IN THE ISLE OF MAN.

NEW ASSOCIATION.

In these days of disaster and disease it is gratifying to have to report that bee-keeping in the Isle of Man is in a prosperous condition. So much so, that the bee-keepers there have made arrangements for starting an association of their own. Prominent among them is Mr. T. Horsley, well known to many of "B.B.J." readers, who presided at the inaugural meeting held at Douglas on the 6th inst., where a goodly number of enthusiasts gathered together to found the Manx B.K.A. An encouraging letter was read from Mr. B. E. Sargeaunt (President of the Chamber of Commerce), who is keenly desirous of promoting any and every Manx industry; and Mr. Sargeaunt was unanimously elected first President of the Association, with Mr. J. Gibson (Foundry Office, South Quay), as secretary; Mr. Devereaux, assistant secretary; and Mr. Norman Kermode, treasurer. The committee was appointed as follows: Messrs. Horsley, Watterson, John Gale, Wilfred Karran, W. Kermode, Percy Leys, John Clucas, H. Fielding, J. Chalmers, Miss Daly, Miss Pollard, J. J. Moughtin, Lancelot Quayle, Grant, Fargher, George Patterson, Foster, Percy Kissack, and the Rev. R. Jones, vicar of Santon.

Almost the most important feature of a bee-keepers' association is its expert adviser, who makes a spring and autumn tour of the members' hives, giving them advice and assistance when desired. It was felt by the meeting, however, that the movement had not arrived yet for appointing an expert, and that the Society should first get fairly on its feet. For one thing, an expert means money, and the sinews of war must first be raised. There was some hesitation in fixing the subscription. The Association is anxious to benefit especially the poor man; but it must have money if it is to benefit anybody. It was resolved that the subscription should be fixed at 2s. 6d., but the committee, in their discretion, can admit the cottager at a 1s. fee; and it was intimated that on application members of the committee, who are widely spread over the Island, would be glad to give their advice and help to less experienced brethren in the craft.—*Communicated.*

HELPFUL HINTS TO NOVICES.

By W. *Herrod.*

HOW TO MAKE A SMOKER.

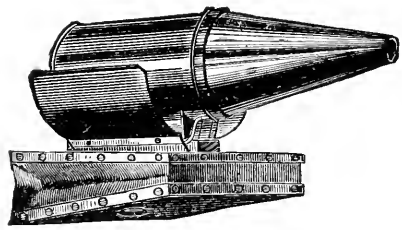
"I have been asked many times to give instructions for making bee-appliances, several correspondents specially mentioning the smoker. Some years ago Mr. T. W. Cowan published a pamphlet under the title, "How to Make an Extractor and Bellows Smoker," and this little work was evidently so widely appreciated that the edition was soon exhausted, and for some time the pamphlet has been out of print. With Mr. Cowan's permission, I am reprinting the portion relating to making a smoker, and I hope that readers will be able to follow the instructions and construct a perfect "Bingham" at home at very little cost to themselves.

"A good smoker is an indispensable implement in the apiary. One of the best is

the Bingham, and although there are many sold as Bingham smokers, some of these are only very inferior imitations of it. There is nothing more trying to the patience than to find, during an operation, that the smoker one is using will not work and will not send forth the needed smoke; and yet it has been our lot, not infrequently, to come across such a smoker when assisting a brother bee-keeper in his manipulations. We have seen some made in this country that worked quite as well as the originals, but many are made with a view to cheapness, and not efficiency, and quite regardless of the principles upon which a smoker should be constructed.

The usual defects consist in using unsuitable springs and leather for bellows, and in not making the entrance in the barrel above the blast-pipe in the shape of a funnel. This defect, if the pipe and the hole above it are not exactly in a line, causes a great deal of air which ought to be driven into the smoker to pass on one side, and the full power of the bellows is not utilised. The spring being of steel instead of brass, and the wrong shape, prevents the bellows working smoothly and closing sufficiently, so that the whole volume of air in the bellows cannot be driven out.

The illustrations we give are drawn one quarter of full size, or a scale of 3in. to



BINGHAM SMOKER.

a foot, except Fig. 9, which is 2in. to the foot.

Fig. 1 is a vertical, and Fig. 2 a horizontal section, through the blast pipe and top board of the bellows. Fig. 3 is a section of the bottom board through the valve. We will first make the tin work of the smoker.

The barrel, A, is 2¼in. in diameter and 6¼in. long. No solder should be used, as the heat would soon melt it and the smoker would come to pieces; therefore all the joints in the tin work must be made without it. The lower edge of the barrel is turned outwards, and the bottom has its edge turned over this, as shown at B. The nozzle, C, is 5½in. long, and fits over the top end of the barrel, tapering to the top, at which the opening, D, is ½in. in diameter.

Three quarters of an inch from the bottom of the barrel bore a ½in. hole, E. Then get a piece of wood an inch in diameter, and cut one end to the shape of a cone. Place the pointed end in the hole and drive in the tin until you have a funnel as seen in the illustration. This funnel, although apparently of

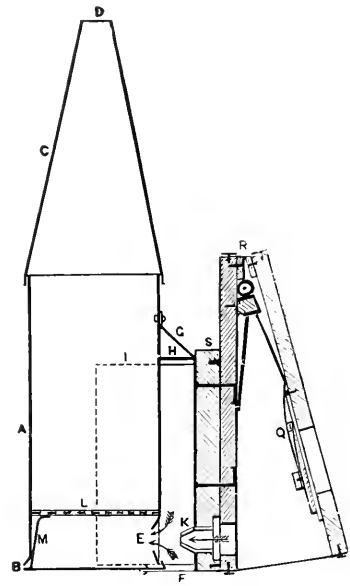


FIG. 1.

trifling importance and is omitted in nine out of ten smokers, adds greatly to their efficiency. If the blast-pipe does not correspond exactly with the hole in the barrel, without the funnel, part of the air is blown on to the round surface and is lost, whereas when it impinges on the inner sides of the funnel it is propelled forward, in the direction of the arrows, through the opening, E, and not a particle of air is wasted.

We have next to make the support, F G, which carries the barrel and the hand-guard. This should be a piece of tin 7½in. long and 1⅝in. wide. At 1¾in. from one end cut in ⅜in. with a pair of shears, on each side, and turn these edges over and hammer them down flat. Do the same thing at the other end and turn down the edges of the centre part at right angles, thus: |——|. Turn up the end, F, at right angles, and the end, G, at an angle of 45deg., as seen in Fig. 1. The distance between F and G should be 4½in. from angle to angle.

For the hand-guard, cut a piece of tin 6½in. by 4in. and bend it, as shown at I, Fig. 2. Then get a short piece, H, and turn up the end at right angles, thus: |—.

The top end must be shaped as shown at H, Fig. 2, as it is intended to support the barrel. This piece as well as the hand-guard can now be riveted to the support, F, G. At $\frac{3}{4}$in. from the end corresponding to the hole in the barrel, punch a $\frac{5}{8}$in. hole to allow the blast-pipe to pass through. The support is now ready to be fixed to barrel by means of two rivets, seen in Fig. 1. The grating, L, is of

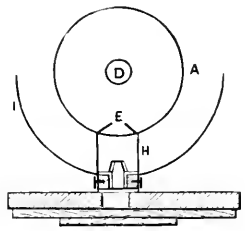


FIG. 2.

sheet-iron, with $\frac{1}{8}$in. holes punched closely all over it. Two strips of sheet-iron, $\frac{3}{16}$in. wide, are riveted on in the shape of a cross and turned down at right angles to form legs, M, which much be $1\frac{1}{8}$in. long. Before putting in the grating, spring the

FIG. 3.

legs out a little, so that when pushed down the barrel it will be kept in position.

We will next make the springs. There is nothing better for this purpose than No. 16 brass spring wire; and this, together with the shape, is what makes the Bingham bellows work so smoothly and

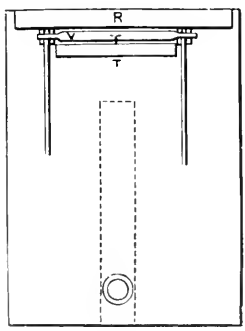


FIG. 4.

pleasantly, without fatiguing the hand of the operator. The best way to make them is to drive into the edge of a piece of inch board two iron pins $\frac{3}{16}$in. in diameter, and projecting about $\frac{3}{4}$in. Cut your wire 11in. long and lay it on the board against the iron pins, so that both ends project the same length beyond them. By referring to Fig. 6 it will be seen that the end, P, is turned to the right over pin *a*, and the end O to the left over pin *b*. Each end must have two complete turns and part of a third turn until the ends P and O stand at right angles, in the position shown in Fig. 6. The wire is then taken off the pins and bent at N, until the two spirals meet and the wires P and O are brought in contact with each other, as shown in Fig. 7. Close to the coils give the wires a slight bend, seen in Fig. 8, which shows the spring when it is slightly pressed down, as it would be when between the two boards of the bellows. The springs, however, are stronger if left at right angles. The only metal work remaining to be made is the spring Q, of which a side view is seen in Fig. 1, and a plan in Fig. 5. This consists of a

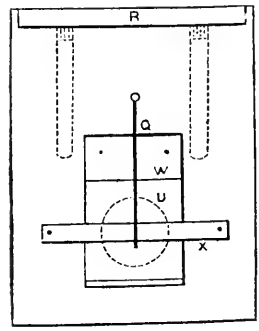


FIG. 5.

piece of No. 22 brass spring wire 3in. long bent into the shape shown in Fig. 1, so as to allow the valve sufficient play, and an eye is turned at the end through which it is fastened by means of a tack to the bottom board of the bellows.

We will next proceed to make the bellows. For the wood-work we can have nothing better than well-seasoned yellow pine free from knots, as lime-wood, which is usually used, is not so common with us as it is in America.

The pieces of wood necessary will be:

Two pieces $5\frac{1}{2}$in. × 5in. × $\frac{3}{8}$in., planed on both sides.

Two pieces $4\frac{3}{4}$in × $\frac{1}{2}$in. × $\frac{3}{16}$in. at one edge, an $\frac{1}{8}$in. at the other, as shown at R, Figs. 1, 4 and 5. One piece, S, Fig. 1, $4\frac{3}{4}$in. × $\frac{7}{8}$in. × $\frac{1}{2}$in., with a groove $\frac{1}{16}$in. wide, sawn half way through $\frac{1}{4}$in. from the ends. These are to allow the wire to pass through which is used for fastening the support of the barrel F G to the woodwork.

One piece T, $2\frac{1}{2}$in. × $\frac{3}{8}$in. × $\frac{3}{8}$in.

One piece U, 2in. × 2in. × ¼in. for valve. In the board, Fig. 4, taking as a centre ⅜in. from the edge cut out with a centre-bit a ⅝in. hole. In board, Fig. 5, 2 inches from the edge, cut out a hole 1½in. in diameter.

In piece S, at ¾in. from one end, bore a ½in. hole, and drive into it tightly a piece of brass tube, the mouth of which is contracted to ⅜in., as seen at K. This contraction is easily made by driving the tube into a conical hole drilled in a piece of iron. Just below the blast-pipe chisel out a piece $\frac{1}{16}$in. deep to admit a strip of wire gauze, which is to be placed there to prevent the possibility of any dirt or ash from the smoker getting accidentally into the bellows.

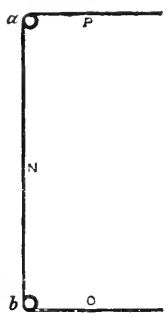


FIG. 6.

The piece S can now be glued on the board, Fig. 4, in the position shown by the dotted lines, it being on the underside in the illustration. To prevent its being

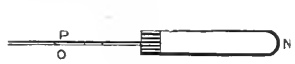


FIG. 7.

broken off, drive two wire nails through, and clinch them as shown in Fig. 1. Glue the strips R on each of the boards, with the thickest edges towards the hinge, and the piece T ⅜in. away from R, Fig. 4. Secure all these pieces with a couple of nails each, but do not allow the points of the nails to go through the boards, and thus disfigure them. The piece of wood V, Fig. 4, is 3½in. long by $\frac{3}{16}$in. square. The two ends are rounded, so as to allow them to fit tightly into the holes of the spirals in the spring. A piece of No. 22 wire is inserted through the holes, and lays along the side of the wood, and when the springs are in the position seen in Fig. 4 the ends of the wire are turned up, and prevent the springs from slipping off.

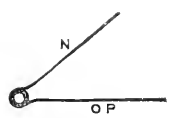


FIG. 8.

The boards are now ready to put together, and to have the hinge put on. This is a strip of leather 5in. long and 1⅜in. wide.

Lay the two boards, Figs. 4 and 5, so that the strips R face each other. Then glue the ends, and put on the leather. The valve U can then be fixed. It has a groove sawn out through half its length to allow the spring Q to work in it and keep it in its place, and this side is rounded off as shown in Fig. 3. The valve can be fixed to a piece of leather W, 3¼in. × 2in., by means of a short tack driven through the centre, the point being riveted on the other side. The wood of the valve should not be glued to the leather. Two tacks at one end, Fig. 5, will keep the leather in its place, and allow it to move freely up and down at the other end. Now nail the spring Q in its place, and put the loose end into the groove of the valve. Nail a strip of leather about 4½in. long by ⅝in. wide loosely over the valve, so that when this is open, the opening does not exceed ¼in.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES FROM ALLAN VALE.

[8688] I was not a little surprised last summer to hear the notes of Chiff-Chaff in my garden, it remained all the summer about the neighbourhood. There appeared to be a pair of them, but of this I could not be certain, as it is only the male bird which utters the peculiar note which gives it its name of "Chiff-Chaff." This bird so closely resembles the Willow Warbler in plumage and size that it is difficult to distinguish the one from the other, except by the note. I never remember hearing the Chiff-Chaff in Scotland before. Have any of the readers of the "B.B.J." noticed it last summer in their neighbourhood? Would it be the great heat of April last year that induced it to migrate so far north?

The Willow Wren is one of the earliest birds to arrive in the south, often early in March, and builds every year near my house. The Chiff-Chaff is another early arrival in the south but is supposed to be limited in its migration to the northern counties of England.

"*Infectious Paralysis!*"—Surely this is a strange name to give to a disease. You might as well talk of infectious toothache. Paralysis is an effect not a cause. Why not call it bees' sleeping sickness? I am thankful to say it has not yet come my way, and I have only seen its symptoms described in the "B.B.J."

Heather Honey as a Winter Food for Bees.—After having had my bees suffer very severely for two winters from dysentery they appear to have come through the present one so far safely, although they have had scarcely an oppor-

tunity to leave their hives for weeks. I am inclined to believe that this arises from their having gathered little or no heather honey last autumn. What little they did gather would be used up in the fine weather of October.

Painting Roofs of Hives Inside.—A question on this subject was asked in "B.B.J." I am inclined to think that it would greatly help to keep out wet. The moisture of the hive is condensed on the inside of the roof, and there absorbed into the unpainted wood, so working its way under the paint of the outside, then, when frost comes the paint is cracked and injured. I have noticed that the paint is good all round the edge of the roof, whilst it has given way in the centre; the edge is painted underneath as well as above.

Birds and Bees.—May I offer a plea for my little friends the Tits. Many people who live in the country know little of birds or their habits. Last year I had three pairs of Blue Tits building in my grounds, and I never saw one attack the bees. I cannot say this of the large Tit, it is a great enemy to the bee. I have watched these birds time after time return to the hive, catch a living bee, and go off with it; they will also take them when they are gathering pollen on the willows. They also build in my garden. The Coal Tit is a nuisance to the bees. It is about the same size as the small Blue Tit. I have watched it also continually alighting at the front of the hives and taking the bees from the very entrance. The Coal Tit is not so common as the latter variety. I have never seen the Marsh Tit here, but knew it well when I lived in the south. The enormous number of caterpillars these birds destroy during the breeding season should make us very slow to condemn them for the few bees they destroy in the spring.

The Common Fly-Catcher will sometimes sit near my hives and catch a bee as it passes. In appearance, this bird is not unlike a tree sparrow, and I expect this is the bird that some take for a sparrow. I never, myself, knew the latter touch the bees.

I ventured my head close to the entrance of a wasp's nest for the purpose of seeing whether they, on coming into the light and just before taking flight, passed their front legs over their antennæ in the same way that bees do, but they do not appear to do so. Someone suggested in these pages that the bee is cleaning its antennæ when it does this, but anybody who closely observes this habit will see, I think, that this is not the case. Just before taking flight, at the entrance of the hive, the bee passes its front legs over its antennæ once only.

An Unknown Sense.—In the number of "B.B.J." for October 3rd, last year, I referred to the flight of bees returning to their hive, and how a slight movement of 3in. to one side of one of the hives so confused the bees that they alighted on the spot where the hive had stood, and then ran along the alighting-board to the place to which I had moved it. I should have said that the alighting-board extends the whole length of the bee-house, and is exactly similar throughout its length. In the issue for October 31st, Mr. Crawshaw has gently laid his hand upon me armed with a fountain pen. He must forgive me if I meet him with a goose's quill! Let us suppose there are no well-marked paths to the houses, what then? In front of my bee-house cinders are laid down. Let us suppose these cinders were all raked over, what then? Supposing the moon was all raked over some fine day and all the various volcanoes on its surface overturned, what would be the perplexity of astronomers next night when looking for the mountains in the moon? Yet you might rake the cinders in front of my bee-house as much as you liked, and I am convinced not a bee would be troubled on its return to the hive by this change of surroundings or the obliteration of the "well-marked path." Of course, if you have well-marked paths leading to a row of houses, and all the houses are moved, the paths remaining in their old position, I can imagine the dire confusion that would arise and the difficulty your esteemed correspondent would have in finding his own door, particularly if he was in a great hurry, but in the case that I have stated the *surroundings* are altered and there is no confusion—the *position* is altered but 3in., and there is.—HUMBLE BEE, Allan Vale.

TELLING THE BEES.

[8689] Some years ago I asked an old Worcestershire bee-keeper what was his belief on the subject of "Telling the Bees," and he replied that there is a great amount of commonsense in the old superstition; because the people who took enough interest in the bees to tell them of their master's death generally looked after them in other ways, and naturally the bees benefitted. On the contrary, if no one took the trouble to "tell the bees" no one took any other trouble with them, with the result that sooner or later they died out.

This simple explanation (which I have never seen in print) enabled me to understand why this particular custom was so widely and implicitly believed in, and why it is dying so hard.—BEESTON, Notts.

EARLY QUEEN WASPS.

[8690] It may interest your readers to hear that I caught a fine specimen of queen wasp to-day. I think it very early. —J. SUTCLIFFE, Bingley, Yorkshire, March 10th.

[8691] Owing to the bright weather, no doubt, of Saturday, the 8th, several queen wasps were observed flying here. I captured a fine specimen near my hives on Sunday, the 9th.—F. H., Watford.

Queries and Replies.

[8607] *Recipe for Honey Toffee.*—Could you, through your columns, oblige me with a recipe for making toffee with honey something similar to Everton toffee (medium and hard) or could you tell me where I could obtain the information?—TOFFEE, Macclesfield.

REPLY.—To make Everton toffee, put into a saucepan 4lb. light-coloured sugar and a pint and a half of water. Place the whole on the fire and stir it occasionally till it boils, then put on the cover and allow to boil for ten minutes, take off the cover and put in thermometer and allow the sugar to boil till 310degs. is reached. Have by your hand 1lb. of good butter already melted, and directly the sugar is done, pour the melted butter into the boiling sugar, allow it to remain on the fire a few minutes till the butter boils through the sugar. Next pour in 1¼lbs. of honey, ready at hand (about 5ozs. per pound of sugar), and a teaspoonful of essence of lemon, and allow the mixture to boil again for one or two minutes, taking great care not to let it overflow, as honey, like milk, rises quickly. Then pour into plates which have been previously oiled. When nearly cold, mark into bars with a knife.

[8608] *Queens and Queen-mating.*—I thank you for your answer to my inquiry *re* immature drones. Am I justified in assuming the following:—(1) That the mature drone is swifter and stronger on the wing? (2) That when plenty of mature drones are flying, the possibility of wrong fertilisation is very remote, even though some immature drones are flying. (3) Is there any way of detecting a queen badly mated? Would she be less prolific and her progeny short-lived, or is there some other way? (4) Would an egg laid by a fertile worker in a drone cell produce a mature drone, and would that drone be in all respects equal to the mature drone produced by a fertile queen? (5) Would a stock, robbed of queen, eggs, and larva during a honey-flow, give more honey or less. Would they be discontented and ill-inclined to work, and would they produce fertile workers and immature drones extensively? (6) From what I have read and seen, Italians are rather more prone to fertile workers than British bees. Is this your opinion? (7) I understood Mr. Herrod to say at his lecture at Nottingham on Saturday last that the best queen-cells were those of good shape and deeply indented, while those cells containing drones, reared as queens, were perfectly smooth. I can bear him out as to cells with deep indentations producing good queens, but how do you account for the following: That two cells of equal size, shape, &c., produce two queens of equal merit. One cell is reared on a new comb, and is but slightly indented, while the other, reared on an old comb, is deeply indented?—W. A. H., Alfreton.

REPLY.—(1) and (2) Yes. (3) The queen would be less prolific. (4) We should say yes. (5) The stock would not produce surplus at all; the bees would be discontented and would not work well. It is very possible a worker would commence laying and immature drones be produced in worker-cells. (6) Yes. (7) The condition you mention is due to the age of the comb. In a new comb the indentations will not be so deep, but the queens will be of equal merit.

[8609] *A Lost Stock.*—All the bees in a straw skep died the other day, outside the skep, at the back of it. They had plenty of honey, and I extracted over 5lbs. from the combs. (1) What could be the reason of the death of the bees? (2) Can I make any use of the honey, or sell it, it tastes well enough? We have several similar cases throughout the county. (3) In order to prevent swarming in summer, would it be better to place the excluder on top of the first shallow super, and not on brood-chamber? (4) Wild bees ate a hole through several of my super foundations last season; can I make use of the foundations for the coming season, or had I better put in new? Thanking you in anticipation.—I. O., Anglesey.

REPLY.—It is impossible to say what is the cause of death without seeing some of the bees. (2) You might use the honey for household purposes. (3) No. The right place for the excluder is over the brood-frames. (4) Put in new foundations.

[8610] *Bees Building Comb in Candy-box.*—My bees have surprised me by building comb last week in the partially emptied candy-box. Can you explain this? I thought wax was made from honey, and

as they are taking the candy quickly now one imagines they would not have any honey left.—INQUIRER, Horsforth.

REPLY.—Bees will at times take candy in preference to their own stores. They can also make wax from sugar syrup. The building of comb in the candy-box indicates they are in a strong and healthy condition.

[8611] *Swarm-catchers.*—Kindly reply to the following questions in the next issue of the "B.B.J.": (1) There has been a great deal of talk in this district about swarm-catchers, and having seen them mentioned in the "B.B.J.," I would like to have your opinion on the matter. Can this appliance possibly harm the bees in any way? (2) Does it interfere with the going and coming of the bees? (3) Does it help to make the bees irritable, and thus result in fighting? I am one of these individuals who am compelled to be away all day, and thus run the chance of losing any likely swarm.—D. G. N., Broughty Ferry.

REPLY.—(1) Swarm-catchers do not injure the bees in any way. (2) To a certain extent, yes, especially as it prevents the issue of the drones, and they worry round the excluder zinc. (3) No, it will not make the bees irritable.

TRADE CATALOGUES RECEIVED.

Jas. Lee and Son, Ltd. (Head Office and Power Works, George Street, Uxbridge, Middlesex. Showroom, 10, Silver Street, Holborn. Bee Farms, Fulbourn and Wilbraham, Cambs.)—Messrs. Lee and Son issue their first catalogue from their new and extensive premises, which they have been compelled to acquire on account of the rapid growth of their business. The extra storage room will enable them to stock a quantity of made-up goods so that prompt dispatch will be possible. The catalogue of forty-eight pages is replete with all that is necessary for modern bee-keeping. The firm is so well known that words of commendation from us are unnecessary. Amongst the new goods listed we notice "The Richards Porch," the Wilkes and the Blomfield "Hive Tool," "Special Jars for Exhibition purposes," and the Roberts' Section Wrappers. The catalogue may be had post free upon application.

Notices to Correspondents.

*** *Queen-rearing in England.*—The copies advertised in last issue of "B.B.J." have been sold. Will readers please note, as we have had to return so many postal orders that it has cost more than the amount received for the books.

A. E. T. (Edgbaston).—*Hive Entrance.*—We are sorry to say we cannot understand your sketch; if you could send us a small model we shall be pleased to give you our opinion.

Q. (Gloucester).—*Queen Cages.*—You can make either pattern of cage with perforated zinc if you wish.

P. V. L. (Worcester).—*Foundation.*—(1) The wax is pure in your sample of foundation. (2) If you can refer to the BRITISH BEE JOURNAL of March 9th, 1905, you will find full particulars as to testing the purity of beeswax.

SCOUT STRANGER (Cheltenham).—*Bee-keeping Competition.*—Write for particulars of the competition to the Exhibition Commissioner, 14, Burleigh Street, Strand, London, W.C.

T. C. (Co. Cork).—*Extraneous Matter in Bee Journals.*—Like yourself, we fail to see the analogy between bee-keeping and millinery, but space must be filled somehow, and evidently the Editor of the paper in question was short of copy and had to use what was to hand.

R. A. (Bath).—*Preventing Infection.*—All you can do is to paint the hives inside with Ayles's Cure when spring-cleaning. Also take the precautions advised in the Board of Agriculture leaflet as to drinking places, keeping stocks strong, cleanliness, &c.

E. A. U. (Eltham).—*Preventing Disease.*—You should put a little salt in the drinking water and wash the vessel out with water and carbolic acid every few days. You might also paint the hives with Ayles' Cure when spring-cleaning.

S. S. B. (Carnarvonshire).—*Various Queries.*—(1) We find no trace of disease in the bees you send. They have probably been chilled, or they may be those which have died a natural death and been thrown out of the hive. (2) The sample of honey is a good heather blend, and should sell best in the sections: 8s. 6d. to 9s. per dozen. (3) There is no Carnarvon B.K.A.; you should join the British Bee-keepers' Association.

Suspected Disease.

W. J. F. (Perth).—The bees have died from "Isle of Wight" disease.

J. T. (Cornwall).—(1) We do not find any trace of disease. (2) They are ordinary British bees. (3) Do not start syrup-feeding yet, wait until the beginning of April.

H. I. (Sutton Coldfield), B. (Lewes), PRESHATE (Marlborough), J. J. (Slawit), and J. H. (Redditch).—The bees have died from "Isle of Wight" disease.

H. W. (Lymm).—We cannot find traces of disease in the bees sent, as they are very dry, and we would advise you to

melt the combs down rather than run any risk through using them again.

C. E. A. (Sevenoaks).—The bees have died from "Isle of Wight" disease. We regret to say that up to the present time no such remedy has been discovered.

A. D. G. (Cambs.).—Both lots died of "Isle of Wight" disease. The sticky substance is no doubt pollen.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½*in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

FOR SALE, four strong, healthy Stocks of Bees, in almost new Standard hives. 25s. each; new Extractor, ungeared, 14s; empty hive, 5/-.—CURTIS, Oakfield Lodge, Stoke Bishop, Bristol. v 49

WANTED, a few Sections of Honey, glazed, good price paid.—DOLLIS PARK DAIRY, Church End, Finchley.

CANADA.—For sale, well built House, stable, sheds, and acre of ground, with Apiary of Italian Bees, good clover location, opposite station, will work bees on shares this year, plenty of work in neighbourhood.—ERIC MILLEN, Government Apiary Inspector, Ontario Agricultural College, Guelph, Canada. v 42

ONION PLANTS.—Golden Rocco, Ailsa Craig, 100 each, 8d.; 200 each, 7d. per 100.—E. THOMPSON, Gowdall, Snaith, S.O., Yorkshire. v 29

SEVEN 14lb. tins of Granulated Honey, 7s. per tin; also few dozen 1lb. Jars, 7s. dozen; sample, 2d.—W. JOHNSON, The Cross, Melbourn, Cambs.

FOR SALE, 8 dozen, screw cap 1lb. bottles of Light Honey, 8s. per dozen, free on rail, cash or deposit; sample, 2d.—J. R. TRUSS, Ufford, Stamford. v 34

FINEST ENGLISH HONEY, 15s. per 28lb. tin; sample, 2d.—DUTTON, Terling, Essex. v 34

SALE, Rymer Honey Press, by Meadows, new, 43s.; also sundry new appliances; or exchange honey.—HUNT, Quarry-rd, Somercotes, Alfreton. v 34

SEVERAL good, healthy lots of Bees, on frames, and a few lots in skeps wanted.—Write, COOPER, Lee, Yarmouth, I.W

WANTED, for experimental work, three lots slightly diseased F.B. Bees, on frames, cheap.—COOPER, Thorley, I.W.

FOR SALE, cloth bound copies 8th, 9th, 10th editions "British Bee Journals," price 30s.; 12th, 13th editions, cloth, loose covers, 15s.—J. ARCHER, Willaston, Chester. v 35

STRONG, HEALTHY STOCK, in single walled hive, two lifts, section rack, 30s.—202, Willow-avenue, Edgbaston. v 32

HONEY.—Six dozen jars finest quality pure English 9s. 6d. dozen; orders booked natural May and June swarms.—MALCHER, Hartwell, Northants. v 38

YOUNG LADY wishes to be received at an Apiary to be prepared for the B.B.K.A. 3rd class examination; references.—PENROSE, Hauteville, Guernsey. v 37

POULTERERS, CUT THIS OUT.—Selection; the only real test laying competitions. Buff Orpingtons won Burnley, 1915. Mine are competition winners, Rawcliffe's, 1911; Collinson's, 1912, open to Great Britain; eggs, 3s. 6d. dozen.—NICHOLSON Langwathby. v 36

BEES.—Old English, on Standard frames, and combs wired, guaranteed healthy, no disease in this district, price 25s. and 30s.; travelling boxes returned carriage paid.—F. A. BEAN, Snaith, Yorkshire. v 39

INCUBATOR, 100 egg, good hatcher, nearly new; exchange for Bees; what offers?—SUCH, 174, Mlicote-road, Bearwood. v 41

IMMEDIATE SALE.—Complete Apiary of 28 Stocks (23 in Standard Frame Hives, 5 in Skeps), Bees examined and certified healthy and strong by Association Expert last autumn, owner has for years obtained good results; reason for disposal, retirement from business and removal to a town, price £18.—WOODLEY, 24, Donnington-road, Reading. v 43

WANTED, Observatory Hive, must be in good condition; state full particulars.—PATERSON, Homestead, Didsbury. v 45

SIX DOZEN nominal lb. screw top bottles Light Honey, guaranteed pure, 8s. 6d. dozen; darker, 8s.; 28lb. tins, 7d. lb.; tins, 1s.—TOLLINGTON, Woodbine Apiary, Hathern. v 45

BEES, in new 10-frame hives, strong and healthy, 30s. each.—EDWARD GRISTWOOD, Cheriton Nursery, near Folkestone. v 31

HOW TO RENDER twelve old combs, with little trouble, so as to get 2½lb. pure Beeswax; full particulars on enclosing 6d. in stamps.—J. YOUNGER, 51 Maid's Causeway, Cambridge. v 30

TWO 1912 PROLIFIC QUEENS, 3s. each; district free from "Isle of Wight."—RIDLER, Dunster, West Somerset. v 44

SEVEN DOZEN screw cap nominal lb. jars finest Honey, W.B.A. label, 9s. 6d. per dozen.—BALDWIN, Underley, Tenbury. v 20

20 SECONDHAND HIVES, nearly new, all one pattern (Garner's), healthy, 5s. each.—POSTMASTER, Haconby, Bourne. v 21

LIGHT ENGLISH HONEY FOR SALE; sample, 2d.—W. H. LEY, Easton, Stamford. v 17

SELL, or EXCHANGE, "Transactions of the Entomological Society of London," complete for 1908, '9, '10 '11, and '12.—HERROD, "B.B.J." Office, 23, Bedford-street, W.C. v 90

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, 5th, and 7th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

CHAPMAN Honey Plants, to blossom 1913, dozen 2s. 6d., six 1s. 6d.; seed, 6d. and 1s.—JOHN P. PHILLIPS, Spetchley, Worcester. v 4

BUSINESS ADVERTISEMENTS.

FOR SALE, healthy Stocks Bees, in W.B.C. Hives, 25s. each.—H. THOMAS, Penybedd, Pembrey, S. Wales. v 40

FOR SALE, first grade 1lb. jars Honey, took second prize Grocer's and Dairy Show; also 2cwt. dark; what offers?—FRUSHER, Crowland, Peterborough.

ALNWICK BEE FEEDER, price 6d. each 5s. 6d. per dozen; postage of one costs 3d., two 4d., six 6d., dozen 10d.—J. BALMBRA, East Parade, Alnwick. v 10

MESSRS. STONE and SONS, Chemists, Exeter, are buyers of English Beeswax, in large or small quantities.—Write, stating quantity and price required.

Editorial, Notices, &c.

SWISS FOUL BROOD INSURANCE.

We have received the report on the Foul Brood Insurance Scheme of the Swiss Bee-keepers' Association for 1912, which is in charge of Mr. Fr. Leuenberger. The scheme has now been in operation for five years, and it is satisfactory to find that considerable progress has been made in reducing foul brood in the different Cantons affected. During these five years the number of members of the Association has increased from 6,831 to 8,740, all of whom are compulsorily insured. The number of colonies insured has risen from 86,526 to 115,206. Of course, there are still a great many bee-keepers who do not belong to the Association. In their apiaries there were forty-six cases of foul brood which were treated by the inspectors, who have, now that legislation has placed bees under the Diseases of Animals Act, been able to visit infected apiaries and order or carry out the necessary treatment. Among the insured, apiaries with foul brood have been reduced from ninety-three to sixty-eight, which shows a reduction from 1.4 per cent. to 0.8 per cent., and taking into consideration that the number of colonies has been increased by 28,680, is a very satisfactory showing indeed. In the five years 574 apiaries had been treated, and over 20,000 francs paid in compensation. In some of the Cantons foul brood has been almost entirely exterminated. In six, namely, in Uri, Unterwalden, Glarus, Zug, Appenzell, and Thurgau, there was not a single case amongst the insured, and only one each of uninsured in two of the above, namely, in Unterwalden and Appenzell. Valais still shows the largest percentage of cases, 9.5 per cent. of the colonies being affected. Most of the other Cantons average between 0.2 to 1.7 per cent. This satisfactory state of things is attributed to the Act which was passed on December 3rd, 1909, which placed bees under the operation of the Diseases of Animals Act, and gave the inspectors powers which have enabled such results to be obtained.

The 114 apiaries where foul brood was found during the year had 282 (30 per cent.) of the stocks affected. Of these eighty-three were cured by the artificial swarming method, and 199 were in too bad a state and had to be destroyed. In all cases the hives were disinfected by burning out with a spirit blow-lamp, and tools, hive, windows, &c., were boiled for one hour in a 10 per cent. solution of soda. Great care is taken to melt all combs, as these are the principal source of infection.

In diagnosing the disease Dr. Nussbaumer, who assisted Dr. Burri, found that most of the cases were odourless foul brood (*B. burri*); 6 per cent. of cases, sour brood with strong-smelling foul brood (*B. alvei*). He also came across a good many cases of dead brood free from bacteria, and in these keeping the colonies warm or changing the queen effected a cure. There has been no call on the Government for financial help as in previous years, for the insurance premiums have produced more than enough money for the expenses, and leave a balance of 1,800 francs in hand. We can only congratulate Swiss bee-keepers on what the Association, under the management of Mr. Fr. Leuenberger, has been able to accomplish with the powers which legislation has given them so recently as two years ago.

BRITISH BEE-KEEPERS' ASSOCIATION.

The annual meeting and half yearly conversazione of the Association will be held on Thursday, March 27th, at the Lecture Hall, Zoological Gardens, Regent's Park (nearest station, Camden Town, Hampstead Tube). The annual meeting, which is for members and delegates whose nominations have been accepted by the Council for 1913, will commence at 4 p.m., and the conversazione will follow at 5.30 p.m.

It is hoped that all those who are interested in bee-keeping, whether members or not, will make an effort to be present and bring as many friends as possible with them. Light refreshments will be provided, as usual. A special attraction is an illustrated lecture on "Bee-keeping in other Countries," by T. W. Cowan, Esq., F.L.S., F.G.S., &c., &c. This will be worth travelling many miles to hear, as Mr. Cowan's unique experience of bee-keeping in almost every country in the world is unrivalled, and we do not know of another person who can talk on this subject from practical experience. Another treat will be the paper on "The Natural History of the Honey Bee," by Mr. G. T. Flashman. Mr. Flashman is a born naturalist, and having heard him speak on this subject we are sure those who hear him will be delighted. Mr. J. C. Bee Mason had offered to show more of his unique moving pictures of bee-life, but unfortunately it has been found impossible to arrange for these.—W. Herrod, Secretary.

NOTTS. B.K.A.

The annual general meeting of the above Association was held in the People's Hall, Nottingham, on Saturday, March 1st, which was attended by a large number of

members, the Mayor of Nottingham presiding. After the reading of the minutes of the previous meeting the balance sheet was considered and passed as a most satisfactory one, although it showed a deficit. The committee's report referred to the large amount of work that had been done. Technical instruction had been given at various shows, and the lecturer's report that large audiences were the rule, and that many enquiries were made at, and between the lectures; that 218 apiaries had been visited, the total number of stocks examined being 889, of which twenty-six were found to be diseased. A case of "Isle of Wight" disease had been reported, and all members were urged to do everything in their power to prevent its spreading. Exhibitions of honey bees, &c., have been held in connection with a good number of horticultural shows, in various parts of the country.

It was unanimously decided to hold the exhibition of honey, &c., at Nottingham again this year on the same lines as the last, which was so successful.

The following officers were elected: President, Her Grace the Duchess of Portland; committee, Dr. Elliott, Messrs. R. J. Turner, W. Adams, T. N. Harrison, G. E. Puttergill, A. G. Pugh, G. Smethurst, G. E. Skelhorn, F. G. Vessey, G. White, and S. C. Hartston and M. H. Fox; hon. auditor, Mr. J. Bickley Chilwell; hon. secretary, Mr. G. Hayes; representatives to the B.B.K.A., Messrs. Hayes and Pugh. A vote of thanks to the Mayor concluded the business for the afternoon, and the company, then numbering about 140, sat down to tea. The meeting was resumed at 6 p.m., when a lecture was given by Mr. W. Herrod on "Queen-rearing and Introduction," to a still larger audience. The lecture was most lucid, instructive and interesting, and was very greatly appreciated by both the old and young in the craft, and at its conclusion a hearty vote of thanks was passed to Mr. Herrod, and also to the British B.K.A. Council for sending the lecturer down.

The distribution of prizes, certificates, &c., and other matters, followed, the meeting concluding with a prize drawing for all who had paid their subscriptions.—G. Hayes, hon. sec.

WARWICKSHIRE B.K.A.

The annual meeting of this Association will be held on April 3rd, at the Grand Hotel, Birmingham, at 5.30 p.m.

After the meeting Mr. Herrod, F.E.S., will give a lecture on "Diseases and Enemies of Bees," illustrated by lantern slides, and as the "Isle of Wight" disease has appeared in the country, it is hoped those who are interested will endeavour to be present.—J. N. Bower, Hon. Sec.

THE B.B.K.A. LIBRARY.

The following books have been added to the library:—Presented by Mr. T. W. Cowan: "An Essay on Bees," by "Pan," Glasgow, 1882; "The Production of Comb Honey," by Hutchinson; "British Bee-keepers' Guide Book" (3rd edition). Presented by Mr. W. Harmer: "The Bee Cultivators' Assistant," by Matthew Pile.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of February, 1913, was £1,837. From a return furnished to the British Bee Journal by the Statistical Office, H.M. Customs.

AMONG THE BEES.

SHELTERING HIVES.

By D. M. Macdonald, Banff.

In selecting a site for an apiary, it is advisable to choose a location pretty well sheltered from the prevailing winds, and more especially from the north. A wall, high hedge, or a belt of plantation serves the purpose effectively, but if none of these are available then something should be provided. My preference would be for something in the form of a hedge, some quick-growing material that would keep green, or at least preserve its leaves during the cold winter. What is known as a wind-break could be constructed, either temporarily or permanently, to run nearly close behind the line of hives, of course, with a path between. In making a lengthy journey by train recently, I was struck with the miles and miles of snow-fences erected along the line side to prevent the railway being blocked during a period of drift in a severe snow storm. These fences consisted of used sleepers raised on end and firmly fixed to cross-bars. They were not placed close together but with an open space between each, and I was told this proved an invaluable boon in helping to keep the line clear. Such wind-breaks are greatly favoured in America as shelters for apiaries, and I think they would be a good thing in very many of our apiaries if artistically constructed to shield hives in any exposed situation.

"*Attention!*"—It is imperative that bee-keepers should keep a watchful eye on bees and their stores during the coming spring. Such a season as was experienced last year with its scant gathering, its poor supply of healthy pollen, and its early stoppage of breeding, will leave thousands of hives weak in stores and bees; and almost certainly many more will prove broodless in early spring from the young virgins being unable to mate within the

period when effective fertilising was possible. Many weaklings will go under, many more will drag along a miserable existence on short commons, and short of bees. Here is a nice little ready-made hot-bed of disease. Weakness of constitution in man, animal or plant, helps to propagate disease if the active source or cause is in close proximity. The careless bee-keeper, too, depressed as he naturally becomes with his non-paying bees, is a source of danger to his near-by flourishing neighbours.

Let me sound a warning note, and ask all to ascertain how are stores? If deficient, make good the deficiency as soon as weather permits. Make certain all colonies are headed by fertile queens. If not unite, and do the same with all puny lots, who cannot survive living an independent existence. In particular, note any signs of disease as soon as balmy spring, with its siren voice calls on *Apis Mellifica* to be up and doing once more among the flowers soon to bloom.

Doubling.—A correspondent desires to know "how my plan of doubling the brood-chamber would work without excluder?" I am at present rather busy, and therefore rather than hunt for my past treatment of the subject, I will deal with it in connection with the use, or non-use, of queen-excluder. Suppose I wanted to work on the principle of making one of the brood-bodies a *breeding* area and the other a *hatching* area, this appliance is indispensable, because during a period of about three weeks the queen must be confined to one division, and after this, for another three weeks she will be limited in her labours to the other. This is an interesting procedure which I should like to discuss during the active season of bee increase and honey-storing, and I would be pleased to learn results from others who experiment.

The correspondent in question can, however, work the system without queen-excluder if he pleases. In this way the queen will have the whole range of the eighteen or twenty frames in the two boxes to roam over at will. A very prolific queen at times may find the space perfectly suited to her needs, but one with smaller laying capacity rather scatters her eggs, not so much perhaps from choice as from necessity, because so many cells are taken up with stored nectar. Consequently brood may be found too patchy, and nurses may be called on to go to several isolated batches of young larvæ. In very changeable weather, with rapidly varying temperature, some of these little islands of brood may suffer from chill. A prime laying queen, however, will compel the workers to clear the honey right off from whole combs, and polish up the cells, starting from the centre right out to accommodate her egg-laying, which will be found compact and uniform. Another factor determining these results is the nature of the income. A bountiful flow will cheer up bees and queen, and make them "put their best foot foremost."

"Kill to Cure!"—Mr. Herbert Mace seems to feel aggrieved at my silence. Why? He said his say, I said mine. Saying more would be like beating a dead donkey. Of all the faults connected with bee-literature this is to me the most grievous to bear, that iteration and reiteration goes on endlessly. It shows the good-heartedness of our editor that he allows it in regard to bee diseases, but really a point comes where this horrible repetition should cease. These are two reasons for my silence, and a third is that Mr. Heap dealt very pertinently with the subject the other day. I observe that my friend Mr. Simmins is still beating the air over the so-called cures of "Isle of Wight" disease. If I am mistaken in the following statement I will apologise, but my distinct recollection is that he himself has told us he has not that disease at Heathfield, at which I feel heart glad, and that he has not had personal contact with it. To my sorrow, I have had! Mr. Simmins, last spring, was kind enough to write and give me, in considerable detail, his plan of curing. He even sent me the materials for experiment, and I spent another £2 on further appliances, &c. I proceeded with the brightest of hopes, and the firmest determination to work for a cure, with the result, alas, already recorded in the JOURNAL, that I found all so-called cures as effective as dirty water. I hoped and worked for a more favourable result. Yes, I worked hard and long—"till the heart grew sick and the brain benumbed as well as the weary hand!"

What use is theory from *dilettante* students of bee medicines in face of facts such as these. Mr. Simmins has in the past come down rather autocratically on my statements in regard to his foul brood cure, and lest he might try it again I may state that my finding as above, has been the experience of 100 bee-keepers over a wide area, who know to their cost that playing with "Isle of Wight" disease is like playing with fire.

Mr. Mace writes as if I were the only "kill to cure" man. I listened to an eloquent lecture recently delivered by Mr. Herrod. *This* was his policy. A score of times in the fall of the year he advocated the same in "B.B.J." in answer to queries. Since the advent of this year any interested will find this is his advice, recorded on pages 20, 40, 50, 70, 80, 90, and 100 of this year's volume.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By George Hayes, Beeston, Notts.

(*Continued from page* 82.)

THE STRAWBERRY (*Fragaria vesca*).

No. 23. Nat. Order. Rosaceæ.

In its wild state the strawberry is a denizen of the hedgebanks and copses. It flowers during April and May, and is always a pleasing sight whether we regard its snow-white blossoms with their golden centres, the exquisite foliage, or the ruddy fruit set amongst its dark green leaves.

The petals are five in number, very fragile; the calyx is cleft into ten divisions; the stamens are very numerous, and form a golden ball in the centre of the flower; the fruit is fleshy and succulent, varying from a white to a bright red. The leaves, stems, &c., are all thickly coated with hair.

The strawberry leaf graces the coronets of nobility, because of its beautiful form; and the Gothic stone carvers used it largely in ornamentation. In the Chapter House at Southwell Cathedral there is some exquisite work of this description.

The generic name Fragaria, from *fraga*, have the same root as *fragrans*, referring to the perfume of the fruit, that it is fragrant, whilst from "vesca" we learn that it is edible.

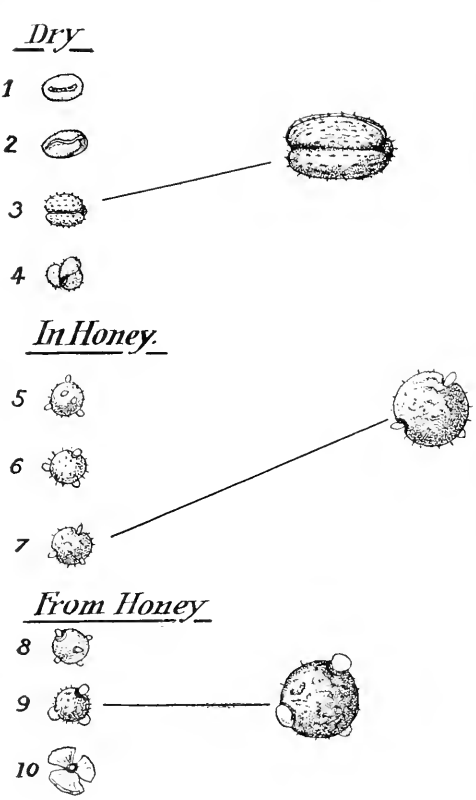
The common name strawberry is derived from the A.S. *streaw*, straw, and *berie*, berry; perhaps from the resemblance of the runners of the plant to straw. It has also been suggested as coming from the straying propensity of these runners "to strew," or from the little straw coloured seeds situated on the red, juicy receptacle we so much like. Others attribute its derivation to the fruit lying strewn on the ground, or to the custom of putting straw between the plants to keep the berries off the ground. Some also think that its derivation was from none of these, but from the custom of selling wild strawberries threaded on their straws. I well remember, as a child, gathering wild strawberries in this way.

In their wild state in this country they have not much flavour, but even these with sugar and cream are not to be despised.

The fruiting receptacle of the wild kind is from a half to three-quarters of an inch long, fleshy, and closely studded with small yellowish-brown shiny carpels, which look like seeds. The cultivated kinds produce large and luscious fruit. A London daily paper last year gave a prize for the largest strawberry that could be found, and it measured no less than three inches across the widest part.

I do not know any vegetable production of the colder latitudes which can be ripened without artificial heat at all comparable with the strawberry in point of flavour. Its fine aroma is not quite so evanescent as that of the raspberry, but it is not durable, and the berries can only be had in perfection when taken from the plants in dry weather.

The strawberry flower is very prolific in pollen, and the bees seem very fond of it, probably because it lends itself admirably for easy collection. As there are several other good sources of pollen at the same time of blossoming of the strawberry, I am inclined to believe that the bee is far more useful to the flower, than the flower is to the bee, especially if we bear in mind that there may be from 300 or 400 stigmas in each flower which require fertilization before we can get a perfect fruit.



POLLEN OF STRAWBERRY.

The colour of this pollen is a pale yellow and when dry it measures $\frac{14}{1000} \times \frac{1}{1000}$. It is slightly oval in form with deep flutings, which in some grains appear as at Nos. 1 and 2, but upon closer examination it will be found that the more common form is as that seen at No. 3. The grains are covered with small spines which are rather indistinct in the

dry state and give them a striated appearance.

In honey they are found in transition forms as seen in 5 and 6, the final form in this medium being as shown at No. 7. This form is retained more or less by the grain when taken from honey, except that it is more swollen by the absorption of water, which, being of less density than honey, penetrates deeper. It now measures about $\frac{1}{1000}$ of an inch, and its appearance is shown at No. 9. On No. 8 will be seen additional or pseudo processes brought about, no doubt, by the same cause.

No. 10 is the pellicle of a grain pressed endwise, which lost its fovilla before the ultimate change had taken place.

(*To be continued.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BLURTS FROM A SCRATCHY PEN.

[8692] *Rusden's Hive and others* (p. 98). —"*Quis custodiet ipsos custodes.*" Who shall censor the censors themselves? We have one who keenly scrutinizes the morals of they who write for the BEE JOURNAL, and should any luckless wight incautiously trip, swish goes the lash across his back. We have, indeed, to mind our P's and Q's lest we be guilty of any terminological inexactitude. The crime of which I am accused is, that in my assimilation I am guilty of hasty mastication, and consequently of incomplete digestion. A "canny Scot," too "canny" to shoot the arrow direct, has used Mr. Crawshaw as bowman. He has offered him a "bonne bouche," a delicious rejoinder, and the morsel has been bolted without any mastication. But I am acting unfairly to Mr. Crawshaw, he has not access to Moses Rusden's book. I presume his "Scottish correspondent" has that access. If not, why does he rush out with uncollated statements.

Although the "Full Discovery of Bees" was written over two centuries ago, yet Rusden in his description is very clear; he has a habit of calling a spade "a spade," and not an agricultural implement. Yankee notions, phonetic spelling, and the latest craze, "Esperanto," may perhaps have changed "English as she is wrote" very much. So much, indeed, that one sometimes scarcely knows if one stands on "head or heels," but by no stretch of imagination has it changed "frame" into "body-box."

Since I wrote the previous article, I have been able to find the original specification of John Gedde. It is much more ample than Rusden's. The screws in question hold four pillars, "making a square frame joynted together by 12 small sticks and six others crossing these." I quote his very words and spelling. Upon this frame (the six sticks crossing) are the *bees* to fasten "their work." It is a very crude idea of a frame-hive. There was the scaffolding laced together by three "small sticks" between each pillar, and the six others for the combs to hang from. A "body-box" would have confined the inhabitants within its solid walls, but in this "frame" they were able to roam at their own sweet will wherever they listed in the hive. Further, speaking of the octagon he says, "it has four windows, each in figure a Rhombus." If, then, there had been a body-box these windows would have been useless.

But John Gedde's was only an improvement and extension of a previously designed hive. In 1654 there was at All Souls' College, Oxford, a "fellow" twenty-two years of age. He was studying architecture, and naturally the works of Nature's own insect architects appealed to him. Even he could learn lessons from them. The straw skeps of his time to him seemed a failure, in that the bees were unable, in them, to utilize the strength of a strong colony. He designed an octagonal hive, transparent, of three storeys, each story an octagonal box exactly fitting on the top of each other, the communication being a hole closed by a cover. But there was no inner frame or body-box. Gedde probably had seen an engraving of this and utilized it, when the original designer had more serious work to do. For, having finished with honour his work at Oxford this student came to London. The Great Fire, as all the world knows, occurred in 1666. Old St. Paul's was burnt down, and the architect who was chosen to rebuild it was the Oxford bee-keeper and designer of hives, Christopher Wren. A letter written by him (February 26th, 1654), tells his experience with two swarms put in them. The bees filled the two lower storeys and commenced but did not fill the upper one.

My researches have introduced me to many old friends, or rather, I am becoming more acquainted with them. Among these is L'Abbè della Rocca, Vicaire General de Syra, a man evidently of high intelligence and keen observation, he writes a treatise (*traitè complet sur les abeilles*), which, in very many deductions, is fifty years in advance of his period

(1790). It runs into three volumes, inclusive of a short history of the Island and a complete and detailed account of how bee-keeping was conducted in his days in the Grecian Archipelago. At the end of an effusion, such as the present is, it is manifestly impossible to do justice to his work, that might perhaps afford matter for another "Blurt," but as I am on the hive business, I am just going to allude to his descriptions of the local hives, although perhaps that is his weakest chapter. His own advanced ideas are shown by the engravings of a bar frame hive of his planning. Those in general use in the Isle, he informs us, are made of baked clay, "the clay of which they make "ordinary vases and bricks." They are in length about 3ft., round, with an outside diameter, at one end of a foot and at the other, 7in. to 8in. Of course, a hive of this shape is not placed on end, as ours are, they are placed horizontal either in bee-houses, or in banks of stone or earth. At each end is a shutter, round, similar in shape and style to the cover of a modern earthenware cooking utensil. Round the edge of the hive is a projecting rim, which is made with holes for wooden pegs to support this cover, and in the cover itself are notches, just sufficiently large to permit the bees to pass out and in. A knob in the middle and a mark corresponding to another in the rim to agree positions complete the outer work, excepting that they are glazed outside all round. But inside they are only glazed on the inferior half, the upper half inside being "diced," better to enable the combs to be fixed. The bees commence in the middle and fill up to both ends.—J. Smallwood.

A GOOD SUGGESTION.

[8693] As secretary of an Association I have frequently on the day on which a lecture is to be given, had a letter or telegram arrive at the last moment, to say that the lecturer cannot attend, owing to various causes. Profiting by these experiences, I make a practice of preparing about a dozen questions relating to bee-keeping. I write these on postcards cut into three pieces, and keep them by me. In the event of a disappointment such as that mentioned above, these questions are placed in a hat, mixed up, and then handed round amongst the members present. Each ticket is numbered so that the speakers take their proper turn. We usually allow ten minutes to each question. Evenings spent in this way are most instructive and useful, and they also make members feel that they are really part and parcel of the Association. It also tends, as it were, to "bring them out" as lecturers after having once broken the ice. I append a few of the questions in the hope that they may be useful to others who may find themselves in a difficulty to occupy time at a meeting. There is no doubt as to the interest aroused, and on more than one occasion we have had the light switched off to stop the discussions. The following are some of the questions, but it is quite easy to think of a dozen to suit local conditions :—

1. What are the *very first symptoms* of "Isle of Wight" disease *inside* a hive of bees?

2. What are the very first symptoms of foul brood, in a hive of bees?

3. What are the absolute necessities for the production of prize sections of honey?

4. Do you consider it advisable to destroy the drones of a stock of bees.

5. Do you think that our present system of hive construction has reached perfection or have you any suggestions for improvements?

6. What book would you recommend a beginner in bee-keeping?—A. Wakerell. Hon. Sec., Croydon B.K.A.

AN ADVERTISER'S GRIEVANCE.

[8694] I have had reason several times to advertise goods for sale in the Bee Journal, and have had a very large number of replies and inquiries of several kinds, but only in quite exceptional cases was a stamp for reply enclosed.

As a sale of this kind is a mutual transaction, and entails a lot of correspondence on the part of the vendor, in addition to advertising expense, I think it might be suggested that inquirers *re* advertisements should enclose a stamped envelope for reply.—E. H. Leech.

[We commend the above letter to our readers. We suffer considerably ourselves on account of neglect of this kind. It is a matter of common courtesy to enclose a stamp when a post reply is required.—Eds.]

RANDOM JOTTINGS.

By Charles H. Heap, Reading.

TO CHECK THE RAVAGES OF WAX-MOTHS.

The ravages of the wax-moth forms a subject of constant complaint during the summer and autumn months. The mischief has then been done, and to complain is like crying over spilt milk. If, however, war is to be made upon moths, operations must be commenced early in the season: but in order to formulate a successful plan of campaign we must first consider what conditions are most favourable to the breeding of *Galleria cereana*, and to a lesser extent of *Achroia grisella*.

During the long autumn and winter

months the bees cut away with their mandibles the waxen coverings of the honey-cells, and let these fall like meal to the bottom of the hive. Many a time when I have touched this wax-meal I have found it warm with the glow of insect life, that insect life consisting of the larvæ of the wax-moth. The text books advise that the annual spring cleaning should be done in April; but in the South of England and the South Midland counties this is, I think, a little too late for clearing away the débris, which has accumulated since honey-gathering ceased. I am aware that the weather is not often sufficiently warm in March to permit of extensive cleaning operations, but where detachable floor-boards are used with hives—frame-hives on any other principle should not be tolerated—it is a comparatively easy matter to remove these accumulations of nibbled cappings, and so exterminate the first brood of moths. Afterwards, in a normal colony, the bees will be sufficiently strong in numbers to take care of the combs. In order to create the least possible amount of disturbance go systematically round the apiary, and see that every hive-body will come away readily from the floor-board. By the time the last hive has been reached, the bees in the first examined will have settled down again, assuming they were disturbed by a little force having to be used to pull the parts asunder. At this stage, unless a thorough examination can be made for the presence of disease, it is better to give back to each hive its own floor-board, even if the parts of every hive in the apiary are interchangeable. Have, therefore, at hand a spare floor-board or other suitable board, and lift the brood-chamber gently upon this, and at once brush or scrape the rubbish from the bottom of the hive into a suitable receptacle and otherwise cleanse it, if time permits, by washing with water containing washing soda or some suitable disinfectant. Should disease be suspected in some hives, a fresh sheet of old newspaper should be laid over the spare floor-board each time before a brood-chamber is placed upon it. The paper should afterwards be burnt.

A rough, badly-fitting hive gives the female moth fine opportunities for laying her eggs, which lie safely in the cracks and crannies; but here the remedy is obvious. Use better hives. Every bee-keeper knows what excellent hiding-places from the bees the saw-cuts in the top bars of frames afford the fat and sickly-looking larvæ of the moth. I am discarding top bars with saw-cuts, and as for those I have in stock I am filling up the crevices with putty. By the way, I noted that a correspondent writing a few weeks ago to the "B.B.J." suggested running hard varnish into the channels and allowing it to harden.

Old worn-out quilts, and the large variety of articles that are made to do the duty of quilts, especially the discarded garments of various members of the bee-keeper's family, are bad enough in many cases, when placed with a little care within the hives, but as often as not they are bundled right on to the top of the frames, affording the larvæ of the moth just the protection they need on entering the pupa stage. Moths are sometimes troublesome, even where good quilts are used. The best way to deal with these is to place them in the kitchen oven when the fire has begun to die down at night. When taken out before the fire is lighted in the morning, the larvæ will be found shrivelled up and all the eggs destroyed.

Everyone who has had a fair experience of bee-keeping knows how readily weak and diseased stocks fall a prey. It is not, of course, good bee-keeping to allow a healthy stock to become weak, but where weakness is due to disease, which is often the case, the wax-moth is usually a friend in disguise. It is well that the germ-laden combs should be destroyed, and the wax-moth does the work, not always with the completeness one could desire, but still, sufficiently well to cause the ignorant and careless bee-keepers to have a clean up or to render the neglected hive no attraction to a vagrant swarm.

To sum up: if the bee-keeper is to keep the wax-moth at bay he must bestir himself early in spring, avoid everything that will assist the pest in propagating its species, and take care that he has only strong stocks in his apiary.

Heating the Spur Embedder.—Most readers have seen the photograph and description of the contrivance by which the Rev. F. S. J. Jannings, of Warmsworth Rectory, heats the Wioblet spur embedder; but I should like to mention that a simpler and more compact device may be bought at a leather-seller's shop for a few pence. This is used by shoemakers for heating their burnishing irons. As a makeshift, a brick and a candle may be used. Warm the narrow side of a brick, and after lighting the candle allow some of the grease to fall upon it. The grease should be partially remelted with the flame of the candle, and before it sets, the candle should be pressed evenly and firmly against the side of the brick. The candle must be placed on the brick at a point which will allow the flame to warm the embedder when it is laid along the top of the brick, and slightly over the side. A bit of tin might be used between the flame and the embedder to prevent its getting sooty.

HIVES.

The would-be apiarist, when consulting any of the catalogues of our up-to-date hive manufacturers, is likely to have some difficulty in deciding upon which of the many patterns of hives offered to adopt. It is certainly an advantage to have all the hives in the apiary of the same type, in order that the different parts may be interchangeable. Frequently, during a good flow of nectar, it will be found that more supers are required by some stocks than are accommodated by the two lifts usually sent out with each hive by the makers. In such a case, provided all hives are of the same pattern a lift can be borrowed from one upon which it is not needed at the time. The advantage of double walls as a protection from extremes of cold and heat is recognised not only in this country but in America, where the practice of wintering bees outside in double-walled hives is being increasingly followed. Being better protected, bees in double-walled hives consume less stores in winter than those in single-walls, come out stronger in spring, and are not so likely to swarm during hot weather. The hive known as the "W.B.C." is the most popular of the double-walled patterns. It is compact and easily moved about in the apiary, and is quite satisfactory as a hive to move to the heather. Bees travel well in it during hot weather. Stocks can be comfortably examined, supers quickly put on and removed when ready by the use of super-clearers, and when preparing for winter the eke placed below the brood-chamber will assist ventilation and lessen the danger of the entrance being choked by dead bees. If the ten or eleven frames in the brood-chamber are found to be insufficient for the queen during spring, her domain can be extended, and contracted to its original dimensions when the main flow sets in. Or when sending to the moors, the plan of using but one shallow-super as a brood-chamber can be followed.

Single-walled Hives.—I have come to regard these as but little better than makeshifts. In addition to the poorer protection afforded, I do not find them so convenient to handle. When the lifts are fitted with plinths, the plan of leaning on a lift when examining in spring, in order to ward off any cold breeze which might spring up, cannot be followed, as, owing to the ends of the top bars of the frames being almost flush with the sides of the hive, frames cannot safely be lifted. Supers of shallow-frames cannot be used, nor can a "W.B.C." section-rack, as there is insufficient room for them. The alternative is to use the ordinary section-racks, or to fit the lifts with detachable side walls to support the frames, but if these walls are used a super-clearer cannot be operated, and, indeed, with all single-walled hives there is likely to be some difficulty in its use. Quilts cannot be so snugly tucked down and round the ends of frames with single as with double-walled hives. When made with a reversible lift which telescopes over the hive body the hive is more convenient, but even then the cleats which support the lift when in position to receive supers will be found in the way when putting on and taking off supers or using a super-clearer. Too often, after a single-walled hive has been in use a year or two, it will be found that the timber has shrunk to such an extent that an insufficient space is left below and at the sides of the frames. This, bad at any time, is likely to be a serious matter in winter owing to the danger of the space below frames and entrance being choked by dead bees and comb-cappings, and in any case interfering with ventilation to the detriment of both bees and combs.—H. H. Brook.

(*To be continued.*)

Queries and Replies.

[8612] *Starved Stock.*—Some years ago a swarm of bees came out of our church roof and settled on a cypress hard by, while I was taking a wedding. I assured the nuptial party of the good omen, and of the assistance which such a large family required from me to settle their home. Knowing more of human than apiarian homes, I knocked together a hive, with frames, and eventually introduced the swarm to it. For the last two years they have done well, giving me last season, in spite of the adverse weather, 56lbs. of honey. Alas! this ecclesiastical colony has died, and I am sending you a frame. Can you tell me the cause of their demise? I thought it was brought about through lack of store, but the little honey in the comb sent and in another one makes me doubtful. I have other colonies properly housed and do not wish to run the risk of losing them by disease.—Rev. H. B., Grantham.

Reply.—The bees have died of starvation.

[8613] *A Beginner's Queries.*—I have commenced bee-keeping by buying two stocks in skeps which I have placed over quilts, with a 4in. hole in centre, on top of "W. B. C." body-boxes. I have cut a hole in top of skep and placed a bottle-feeder of syrup above, and covered up with more quilts. I have read Query No. 8604 in your issue of March 6th, which appears to apply to my case, but I wish to know how long I should leave the

bees to build out the foundation on the frames below. I do not see how I can examine without removing the skeps *entirely*, as I cannot get at the frames otherwise, and I do not wish to do this until sufficient time has been allowed for building the new combs. In your reply to the above query you say: "Then when brood is found in the combs in brood-chamber, make sure the queen is below, and put on an excluder." (2) How am I to determine when the queen is below? (3) Is syrup—medicated—the proper food at this time of year? The bees are taking it greedily. (4) When does the Middlesex B.K.A. expert come round to inspect and advise?—G. F. H., Staines.

REPLY.—(1) In the first place you have put on the skeps far too early; you should have waited till April. (2) You can only ascertain if the queen is below by removing the skep and examining the brood-combs. If she is not there, then it will be necessary to drive the skep to find her. You should examine at end of April to see if combs are built out below. (3) It is rather early to feed with syrup, but now you have commenced continue it. (4) The expert of the Middlesex B.K.A. will start his tour as soon as the weather is favourable.

TRADE CATALOGUES RECEIVED.

R. Steele and Brodie (Wormit Works, Dundee).—This firm's catalogue for 1913 is quite equal to any previously issued, and its increased size is an indication that their business is growing. There are some remarkably cheap hives. This fact, combined with the good workmanship the firm is noted for, will, no doubt, ensure them a goodly number of orders. Being in the centre of the heather district, Messrs. Steele and Brodie know well what is required, and those who take bees to the moors will find they are well catered for. A postcard with address will secure this neat catalogue.

THE HONEY YIELD OF 1912.

According to a current report issued by the American Consul-General in London, Mr. John L. Griffiths, the production of honey in the United Kingdom during 1912 has been only about half that of 1911, and profits have been very materially reduced, with the result that in Scotland many keepers have given up their bees. Bad weather during the 1912 season has also very much affected the yield.

The quantity of honey imported into the United Kingdom in 1910 was 32,032cwt., and in 1911 26,727cwt. The main source from which honey was imported was the British West Indies, with a total of 14,160cwt. in 1910, and 9,097cwt. in 1911; but over 8,002cwt. in 1910 and 6,635cwt. in 1911 was received from the United States. While the present retail prices of imported honey are little higher than in 1911, the fact that the domestic production is so limited will undoubtedly very materially affect the wholesale rates.—*Vide Press.*

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

B. B. (Kent).—*Honey Sample.*—The honey is a very good sample of medium colour, good aroma, very dense, and of excellent flavour. It is from hawthorn, and fruit blossom.

T. B. H. (Birmingham).—*Working a "W.B.C." Hive.*—(1) The 3in. space under combs can be done away with in April. Choose a fine day for the purpose. The cork packing should be taken out in June.

G. ANTHONY (York).—*Unsuitable Candy.*—We cannot say who would be liable, but believe that the man who sold you the candy would be held responsible.

INQUIRER (Malden).—*Bees Storing Water.*—Bees will at times store water, but usually it is carried into the hive and used for liquefying food.

G. H. A. (Coleford).—*Transferring Bees.*—As you say you have a "Guide Book," follow the instructions given on page 149 for transferring bees from a box to frame-hive.

EXONIAN (Devon).—*Dead Queen and Stock.*—The queen is a hybrid Italian, and is not diseased. We cannot say how she was killed.

Suspected Disease.

E. J. T. (Brighton).—There is no disease in bees sent. The photographs we use are sent to us gratuitously.

L. E. B. (Whitley Bay), A. H. H. (Thetford), and H. B. (Malvern).—The bees have "Isle of Wight" disease.

NOVICE (Newcastle).—The comb is infected with virulent foul brood.

S. V. (Belvedere).—(1) The bees were too dry for us to say what has caused death. (2) We should advise your not running any risk with the combs, but melt them down; burn the frames, &c., and scorch the hive before using again. (3) The candy is not sufficiently boiled.

CESTRIAN (Chester), A. D. T. (Nantwich), C. J. S. (Lanarkshire), C. E. (Ledbury), W. J. (Woodham Ferrers), and W. F. (Anglesey).—Bees have died from "Isle of Wight" disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ¼*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

TWO good stocks Blacks, one in new W.B.C. hive, 45s.; older hive, 35s.; expert's opinion, good.—MISS IDA SARGEANT, Braintree. v 65

WANTED, strong Queenless Stock, without hive, cheap, must be healthy.—ILLINGWORTH, Avenue-road, Brentwood. v 52

SELL, OR EXCHANGE for Bees, five Hives painted three coats, complete, fittings, excluder, rack of sections to each.—C. FOWLER, The Lodge, Bracknell, Berks. v 51

GAMAGE DOVETAILED HIVE, painted four coats, covered roof, two racks, sections, 25 loose, foundation, all new, 8s., bargain.—TREVENER, Hughenden-road, High Wycombe, Bucks. v 53

FOR SALE, Section Racks, with dividers and dummies, queen excluders, dummy boards, skep, ends.—HOLMAN, East Hoathly, Sussex. v 55

STANDARD SIZE BAR FRAME BEE HIVES for sale, 5s. each, with second storey for extracting, nearly new, and quite clean.—R. ILLMAN, Nurseryman, Strood, Kent. v 56

WANTED, two Empty Hives or Hive and Bees, in exchange for a handsome 14 months old lemon and white Spaniel Bitch.—LEWIS, Bridgend, Glamorganshire. v 58

WANTED, one or two Skeps of Bees, must be certified healthy and strong; state price delivered at Halifax.—A. FURNESS, 22, Westgate, Halifax. v 60

FOR SALE, ten dozen screw cap jars Light and Medium Granulated Honey, Cheshire B.A. label, second prize Chester, 1912, 9s. 6d. dozen, f.o.r.—A. R. COPPACK, Shotton, Chester. v 63

FROM COUNTRY APIARY.—Stocks healthy English Bees, on wired standard frames, without hives, 25s. each, carriage forward; travelling boxes free.—PARSONS, 52, Witham, Hull. v 64

FINEST LIGHT HONEY.—Few 28lb. tins, 70s. cwt.; sample, 3d.—WAIN, Thorpe Bank, Wainfleet. v 61

FOR SALE, six strong Stocks, in W.B.C. and other good frame hives, complete, guaranteed healthy, 25s. to 30s.; also Extractor and appliances; giving up bee-keeping.—RECTOR, Benefield, Oundle. v 59

HONEY, prime Wiltshire, for sale, 56s. per cwt.; smaller quantities to suit buyers; sample, 2d.—WISE, North Tidworth, Andover. v 54

SALE BY AUCTION, on Thursday, April 3rd, at 12 noon.—The APIARY of the late Mr. W. McNally, Glenview, Glenluce, Wigtownshire, consisting of thirty-six Stocks of Bees, in good hives. Bees are in strong, healthy condition, have wintered well. Strong Heather Honey-press (2 combs can be pressed at one operation), 4-frame extractor, several lots super-clearers, queen excluders, feeders, powerful wax-press, with tub complete, quantity new section racks (also some second-hand), large quantity sections, honey bottles in lots to suit buyers, comb foundation, skeps, wax-moulds, smokers, lamp, with set of honey knives, &c., &c. Many of the goods quite new.—Apply for particulars, MRS. McNALLY, Glenluce, N.B. v 57

WANTED, movable Honey Shed, in good condition, cheap.—Apply, "B.B.J." Office, 23, Bedford-street Strand, W.C.

CANADA.—For sale, well built House, stable, sheds, and acre of ground, with Apiary of Italian Bees, good clover location, opposite station, will work bees on shares this year, plenty of work in neighbourhood.—ERIC MILLEN, Government Apiary Inspector, Ontario Agricultural College, Guelph Canada. v 42

SALE, Rymer Honey Press, by Meadows, new, 43s.; also sundry new appliances; or exchange honey.—HUNT, Quarry-rd, Somercotes, Alfreton. v 34

SEVERAL good, healthy lots of Bees, on frames, and a few lots in skeps wanted.—Write, COOPER, Lee Yarmouth, I.W.

STRONG, HEALTHY STOCK, in single walled hive, two lifts, section rack, 30s.—202, Willow-avenue, Edgbaston. v 32

BEES.—Old English, on Standard frames, and combs wired, guaranteed healthy, no disease in this district, price 25s. and 30s.; travelling boxes returned carriage paid.—F. A. BEAN, Snaith, Yorkshire. v 39

HOW TO RENDER twelve old combs, with little trouble, so as to get 2½lb. pure Beeswax; full particulars on enclosing 6d. in stamps.—J. YOUNGER, 51 Maid's Causeway, Cambridge. v 30

SEVEN DOZEN screw cap nominal lb. jars finest Honey, W.B.A. label, 9s. 6d. per dozen.—BALDWIN, Underley, Tenbury. v 20

20 SECONDHAND HIVES, nearly new, all one pattern (Garner's), healthy, 5s. each.—POSTMASTER, Haconby, Bourne. v 21

SELL, or EXCHANGE, "Transactions of the Entomological Society of London," complete for 1908, '9, '10 '11, and '12.—HERROD, "B.B.J." Office, 23, Bedford-street, W.C. v 90

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, 5th, and 7th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

CHAPMAN Honey Plants, to blossom 1913, dozen 2s. 6d., six 1s. 6d.; seed, 6d. and 1s.—JOHN P. PHILLIPS, Spetchley, Worcester. v 4

BUSINESS ADVERTISEMENTS.

FOR SALE, first grade 1lb. jars Honey, took second prize Grocer's and Dairy Show; also 2cwt. dark; what offers?—FRUSHER, Crowland, Peterborough.

ALNWICK BEE FEEDER, price 6d. each, 5s. 6d. per dozen; postage of one costs 3d., two 4d., six 6d., dozen 10d.—J. BALMBRA, East Parade, Alnwick. v 10

MESSRS. STONE and SONS, Chemists, Exeter, are buyers of English Beeswax, in large or small quantities.—Write, stating quantity and price required.

Editorial, Notices, &c.

LEGISLATION.

We make no apology for bringing this matter forward once more. For years the majority of bee-keepers in Great Britain have been clamouring for legislation to deal with those careless people who *possess* bees, instead of *keeping* them, and who are a menace to the industry throughout the country.

Everyone is quite aware that though legislation will not cure disease, yet by its aid the latter can be kept in check, and its distribution prevented. As a case in point, the Isle of Man has kept quite free from "Isle of Wight" disease up to a little while ago, and at the request of one of the leading bee-keepers on the island (who, by the way, is strenuously opposed to legislation) we urged the islanders not to import bees or appliances from the mainland for fear of infection. This was an appeal to the commonsense of bee-keepers for the benefit of the community in the island, and we are told an appeal of this kind is bound to succeed better than compulsion. Yet, alas, this theory is shown in its true light for, in spite of all warning, bees have been imported, and with them the dreaded malady, which has now commenced its ravages in earnest, and from experience, we are certain that the bee-keepers of the Isle of Man (our anti-legislative friend included) would have given much had they been able to compulsorily prevent the importation of those bees.

What we want to impress upon bee-keepers is this: Now is their opportunity, the Diseases of Bees Bill will be brought before Parliament very shortly, and to ensure its passing they must work strenuously by writing personally to the President of the Board of Agriculture, Houses of Parliament, Westminster, and to their own member of Parliament, and get other bee-keepers to do the same. Also at any meeting of bee-keepers, however small, resolutions should be passed urging the President of the Board of Agriculture to facilitate the progress of the Bill. It is a case for both individual and collective effort, and the work must not be left to others; each one must do his share, and do it at once. The opportunity is here *now*, and if it is allowed to pass it may never come again. If this occurs bee-keepers will only have themselves to blame.

PARLIAMENT AND BEE DISEASE.

In the House of Commons on Monday, Mr. Gulland, replying on behalf of the President of the Board of Agriculture, informed Mr. C. Bathurst (C., Wilton) that Mr. Runciman hoped next week to reintroduce the Bee Disease Bill, some parts of which had been redrafted in order to meet objections which were made on points of detail.

NORTHANTS B.K.A.

The thirtieth annual meeting of the Northamptonshire Bee-keepers' Association was held on Saturday, March 8th, in the Hull Memorial Buildings, Northampton. Mr. W. Herrod, F.E.S., secretary of the British Bee-keepers' Association, was present, and was asked to occupy the chair.

The report and balance-sheet were submitted by the Secretary.

The report stated that the accounts show a cash balance in hand of £12 3s. 1d. The past season, which opened with great promise, closed, owing to the wet, cold summer, in a very disappointing manner, except in a few favoured localities, where a fair harvest was secured.

The committee expressed regret at the loss the society had sustained by the sudden death of Mr. F. Beale, of Kettering, who was a most enthusiastic bee-keeper, and one who had done a lot of work for bee-keeping in the Kettering district.

One item in the balance-sheet was a grant of £22 10s. from the Northants County Council for demonstrations. Mr. Herrod, in answer to a question, stated the amount of support compared favourably with what was done in other counties. The report and balance-sheet were adopted.

Sir Arthur de Capell Brooke, Bart., was unanimously elected as president of the Association, in succession to Mrs. Irene Osgood, who was made a vice-president after having served two terms of office as president. The other vice-presidents re-elected were Earl Spencer, the Lady Knightley of Fawsley, Mrs. Eykyn, Mr. Harry Manfield, M.P., Councillor C. W. Phipps, Mr. Guy Paget, and Mr. A. R. Steel.

Mr. R. Hefford was unanimously re-elected hon. secretary. The hon. stewards, Messrs. R. Brawn and Mr. W. T. Munn were re-elected, as was also the hon. treasurer (Mr. G. E. Atkins).

The hon. district secretaries and committee re-elected were Messrs. J. R. Truss, F. Old, C. J. Burnett, A. Hiscock, C. E. Billson, W. H. Chambers, H. Collins, G. Page, J. Bubb, W. Osborn, O. Orland, G. H. Seamer, G. Mason, Rev. J. P. Frend, and T. A. Roberts.

Mr. G. Mason was elected the delegate of the Association on the Council of the British Bee-keepers' Association.

A letter was read from the secretary to the committee responsible for the Bee Diseases Bill, which has passed its second reading in the House of Commons, but

has been dropped owing to pressure of other business by the Government. Mr. Herrod answered a number of questions as to what would happen if the Bill became law, and a resolution was passed urging on the Government the desirability of taking up the Bill again and passing it into law as quickly as possible. The resolution was ordered to be sent to the President of the Board of Agriculture and the whole of the members of Parliament for Northamptonshire.—R. HEFFORD, Hon. Sec.

HELPFUL HINTS TO NOVICES.

By W. Herrod.

(*Continued from page* 106.)

HOW TO MAKE A SMOKER.

The leather used for the bellows should be Persian, or a similar strong and not too pliable leather, and must be cut to the size and shape shown in Fig. 9. The widest part of the leather is 2¾in., and the narrow ends 1⅛in. If many pieces are to be cut it is better to have the pattern made of sheet zinc to cut the leather out by.

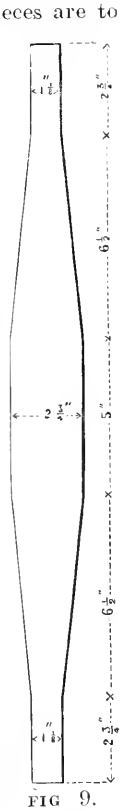


FIG 9.

The spring being in its place and at right angles, we shall want something to keep the boards the exact distance apart while we are fixing on the leather. This can be a stout wire cramp, bent thus ⌐——⌐, the distance between the points being just 2¾in., or a piece of wood may be used with a notch the same size cut out of it. Carefully glue the edges of the boards, commencing from the narrowest part, and lay on the leather, starting from where the tapered part begins; and before removing the cramp, drive in a tack close to the end of each board. The ends and other sides can then be glued, and the leather secured in its place. The two end pieces which have to go over the hinge are better fastened with paste. Where the ends overlap, the edges should be thinned down by paring with a sharp knife. All round the edge we can nail strips of leather ¼in. wide by means of tacks, of which there should be six on the longest side and five on the shortest. These strips of leather need not be glued.

It now remains only to put the bellows and barrel together to complete the smoker.

The support of the barrel is slipped on to the piece of wood S and a couple of tacks, as seen in Fig. 2, are driven into the wood on each side through the tin sides of the support F, G, which we previously turned down at right angles. As an additional precaution against accident and breakage we can tie the support to the wood by means of annealed iron wire, which is passed through the saw grooves in piece S and over the angles of support F, G. Bring the ends together and two or three twists with a pair of pliers will make all firm.

If our instructions are carefully carried out we shall have a real Bingham that will send a greater volume of smoke, and that to a greater distance than any other smoker we know. A smoker like this will burn almost any sort of fuel that will produce smoke when smouldering. We use old rags, brown paper, or sacking, but peat, decayed wood, or even ordinary firewood will do, when it is well kindled.

In using old rags we tear them into strips about 4in. or 5in. wide, and roll them up loosely until they nearly fill the barrel, they are then tied to prevent them from unwinding when stored away, for we always get a lot ready at one time. One end of the roll for about ¼in. is dipped into a weak solution of saltpetre, and when dry this end will light easily with a match. Brown paper is rolled up in the same way, but we generally lay in a few straws, cut to the same length, between the layers. One end of these brown paper rolls is also soaked in the solution of saltpetre.

When we use sacking it is generally from an artificial manure bag, as these cost us nothing. The edges of these rolls are also soaked in saltpetre solution to make them light more readily. Firewood is cut 4in. long and split into pieces ¼in. to ½in. square, and must be perfectly dry. To light it put a few live coals or lighted shavings into the barrel and fill up with the sticks. Put in the lighted end of either fuel used towards the grating.

When the smoker is stood on end as in Fig. 1, the upward draught causes the fuel to burn freely. When we wish to extinguish it the smoker is laid down on the bellows bottom and the nozzle plugged. A smoker properly charged will burn for five or six hours without any replenishing. A roll of rag 5in. long and 2½in. in diameter has lasted us during a whole day's operations. If the grating gets stopped up it can be cleaned with a wire, and the nozzle should always be kept clear.

We hope these details will enable those who have asked us to give them to make an efficient smoker and will explain the reasons for the complaints we get from time to time about smokers not working properly.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

A NEW ASSOCIATION FOR SOUTH STAFFORDSHIRE.

[8695] For several years past the bee-keepers in the southern part of Staffordshire have felt themselves isolated, being evidently too far away from headquarters to be visited after working hours. This condition of things could not continue, and as it is apparent that the County Association do not intend to alter matters, the bee-keepers there have decided to band themselves together and form a District Association, so that they may reap some benefit for their subscription and be better able to combat the "Isle of Wight" disease, which is now very prevalent in the county.

Owing, I suppose, to the publicity I obtained during the recent correspondence in the BRITISH BEE JOURNAL regarding the Staffs. B.K.A., many letters have reached me asking me to take on the task of organising this Association, and in some cases cash is enclosed for working expenses. My interest in bee-keeping and the knowledge of how badly unity is required in South Staffs., compels me to consent.

The benefits we intend to provide are:—That *every* member shall receive *two* visits each season from a qualified expert, who will, if required, carry out an examination of the stocks, and give practical advice. The holding of monthly or quarterly meetings in different districts. The free distribution of bee literature in connection with bee diseases. For the first twelve months *The Bee-keepers' Record* will be posted free to members on payment of the postage only, *i.e.*, 6d.

A general meeting will be held shortly to make arrangements for the coming season, and I invite all those who reside in the above district and who wish to co-operate with us to communicate with me *at once*. In the meantime, particulars relating to the Association will be gladly given upon receipt of a postcard.—JOSEPH PRICE, Haden Hill, Old Hill, Staffs.

MORE SUGGESTIONS.

[8696] It is always interesting to learn something fresh about bee-keepers and bee-keeping, especially about the methods of instruction to bee-keepers at Association meetings, about which Mr. Wakerell writes, *vide* page 116 "B.B.J." I wonder what was on the programme when "the light was switched off." It would also be interesting to know why the lecturers so frequently found at the last moment they could not attend.

Are the lecturers in Mr. Wakerell's district susceptible to some such disease as "Isle of Wight" or "Infectious Paralysis"? If so, we can understand that they are either kept at home for various or obvious reasons, or have hastened forth in search of new ground. A "cure for lecturers' ailments" might be added to the questions list at the next meeting.

While touching upon "Isle of Wight" disease, not lecturer's, may I ask those who have investigated this terrible scourge whether they have noticed that in many cases where it is attended with dysentery the bees die on the combs, and where little or no marks of dysentery appear in the hive, bees almost invariably leave the hive to die? I am inclined to think that so much fermented food found in the combs this winter is the cause of many bees dying of dysentery rather than of "Isle of Wight" disease. It is most probable in looking for the cause of the latter, scientists in making research will prove the fact that nectar and pollen gathered in seasons of continuous damp are the actual cause of the disease; in other words lack of sunshine to mature the nectar and pollen.—A. W. SALMON, East Finchley, N.

"ISLE OF WIGHT" DISEASE.

ADMISSIONS BY MR. SIMMINS.

[8697] I was astonished to read in your issue of March 6th, that "Mr. Heap thinks his kind of paralysis is not infectious after all." I quote this from Mr. Simmins' letter on page 97; and it shows how Mr. Simmins can twist a sentence to suit his own convenience. What I actually wrote was (page 76): "What I have written has been on the assumption that *Nosema apis* is the cause of 'Isle of Wight' disease, or, as Mr. Simmins erroneously terms the disease 'infectious paralysis.'" All I do in this passage is to find fault with Mr. Simmins' nomenclature. I think the disease is highly infectious, and it was because Mr. Simmins appeared to make so light of it in high-sounding, but really meaningless phrases, such as, "Vital recuperative energy," that I entered into this controversy, which has now reached its natural end.

I called attention to the doubt in Mr. Simmins's mind by the use of two words,

"almost impossible," and he replies by saying that he employed these words intentionally because he might not appear to be too hard upon me and others "who have needlessly lost many stocks by the 'Isle of Wight' trouble." I cannot speak for the "others," but in dealing with me I do not want Mr. Simmins to wear soft gloves, because I am prepared to receive hard blows.

The discussion has not, however, been without definite results, for I have got from Mr. Simmins a series of confessions which it will be useful to remember when he again writes about "more self-help being wanted," "vital recuperative energy," "tone to the system," or "recuperative manipulation" (the latter phrase, I take it, means holding all the crawling bees, if not every member of the stock, in the "warm, moist hand for a few minutes") I summarize his admissions as follows, the figures relating to the pages of the "B.B.J." on which they appear:—

He is not in a position to state what is the definite origin of the malady (98).

It is possible ("almost impossible" changed to "absolutely impossible," 97) for a stock to die out in winter after treatment (67).

That any strain of bees will not respond to the remedy (67).

That stocks under his system of treatment may become re-infected (68).

That stocks affected during winter and early spring are unsuitable for treatment.

Those who take the trouble to look up the references will see that only one of these confessions is direct; but the others, I think, are fairly deduced from the context.

Mr. Simmins does not say directly in his correspondence what his system of treatment is, but we may arrive at it by the inductive method. First, the bee-keeper with "Isle of Wight" disease in his apiary must buy a bottle of mixture and, according to directions, spray, or sprinkle it over the bees; secondly, destroy the queen, whether old or young, and purchase an immune (*sic*) one in June; and thirdly, swarm or divide the stock, presumably getting one or more extra queens for the purpose. This entails considerable expenditure, but what does it profit the bee-keeper who undertakes it? Precious little, and has the disadvantage of keeping the epidemic alive instead of "wearing out the plague."—CHARLES HEAP.

MR. T. GARDNER'S APIARY AT SPRINGFIELD TERRACE, GATESHEAD.

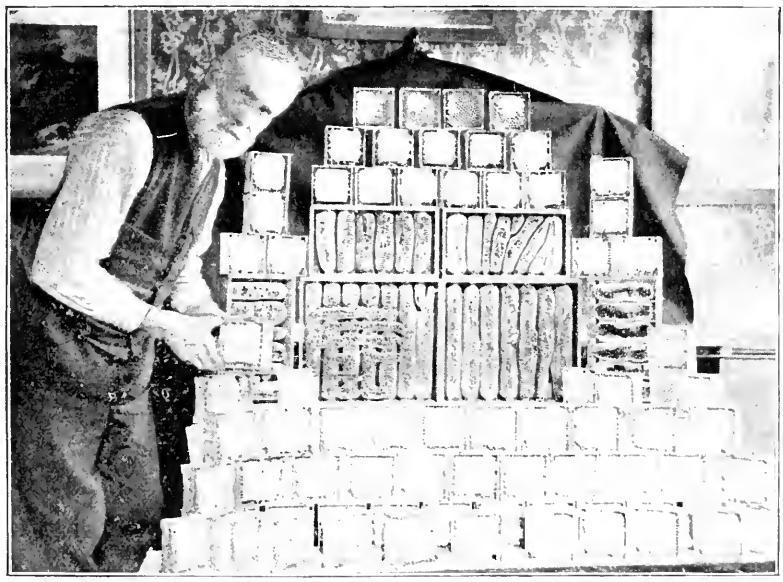
HOMES OF THE HONEY BEE.

APIARIES OF OUR READERS.

We have much pleasure in illustrating this week the apiary of one of the best known bee-keepers in the North of England, Mr. T. Gardner, of Springfield Terrace, Gateshead. Not only is he known as a bee-keeper, but as the friend of many people in the North, and from our experience, when visiting him, we should say there is hardly a man, woman, or child in Gateshead, Newcastle, or for

twenty miles round, who does not know "Tom Gardner," as he is affectionately called, and they will put themselves to any amount of trouble to have "A wee bit cracken wi' Tom."

Mr. Gardner, who was one of the founders of the Northumberland and Durham B.K. Association, is an ideal bee-keeper, his bee-house being a model of cleanliness and neatness; it is so arranged that the hives can be pushed back for greater shelter during the winter, and brought forward, as seen in the picture, for the summer season. Mr. Gardner takes his bees to the moors, each hive in Natal, S.A., in 1879, and onwards for three years, but did not keep bees while there. The only hives I saw there seemed to have no joints, and the bees went in and came out of the hives in all directions. The bees did not store surplus for the winter, and all the bee-keeper could get was little bits of clean honey 'when' he could catch it. I take my bees to the moors, a distance of thirty-two miles, on a flat cart, starting about 9 p.m. and arriving there about 5 a.m., after, of course, having rested and fed the horse on the way. In 1911 I took 11st. of heather honey from seven hives (this is



HEATHER SURPLUS FROM SEVEN HIVES.

having a neatly arranged floor-board for giving ventilation. He gave us a tip when last visiting him, which is well worth noting by those who take their bees to the heather. A piece of thick string is laid along the entrance in front of the perforated zinc, and tacked at either end to hold it in position. During the journey this is wetted from time to time with a weak solution of carbolic acid: in this way the bees are prevented from crowding at the entrance, and so stopping ventilation.

In reply to our request for particulars of his bee-keeping, Mr. Gardner says:-

"You know I am not much of a writer, but I look forward to my BEE JOURNAL every week. What a lot I hear about 'Isle of Wight' disease. During all the time I have kept bees I have never had disease of any kind, though I have had them for over thirty-three years. I was shown in the photograph). I very seldom get any flower honey at Low Fell now, the builders having turned a village into a town during the past few years, and it is impossible for the bee, industrious worker though she is, to gather nectar from bricks and mortar.

I winter my bees on the following plan: Immediately I bring them from the moors I remove the supers. I never interfere with the brood-chamber. I put the Porter escape board over the brood-chamber, first taking out the escape. Above this I pack with straw, using the straw pads from bottles for the purpose. They are then left undisturbed until the spring. Outside indications show an observant bee-keeper in what condition the bees are in the early spring. I can also look through the escape-hole to see that all is well. As soon as the weather is favourable I feed with three pound

cakes of candy, and as the spring advances I take off the boards, and put on the quilts, and after that the section racks."

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Bee-keeping for Women (p. 73).—All speed to "D.M.M.'s" recommendation. Bee-keeping is essentially a hobby for women. Yet the number of bee-keeping women does not increase so rapidly as one might expect from the facilities at their disposal. The economy of the hive is so sympathetic to the spirit of the age that the cult may be confidently recommended to suffragettes! Happy is that bee-man who has a partner of the superior sex. Such women ought to have no difficulty in finding in the ranks of bee-keepers suitable partners for life. To such, may I suggest the "Combination" rather than the "Sectional" hive. I wonder how the friends who sought the aid of the BRITISH BEE JOURNAL in this matter have succeeded. Better than their honeyed dreams, I trust.

An Amateur's Notes (p. 75).—I well remember the delightful notes written by Mr. C. T. Calvert, with whom I occasionally crossed pens in these pages. We can ill afford to lose writers of his calibre, particularly in such a journal as this, where the columns of matter are not too hopelessly overshadowed by advertisements. When in Cheltenham some years ago, I paid a call upon "Amateur," and was unfortunate enough not to meet him, an accident I have always regretted.

Power of Flight (p. 84).—Mr. Judge fairly criticises Dr. Owen's conclusions. It is manifestly absurd to talk of a bee travelling at express speed with a load of thirty times its own weight. No bee-keeper who has watched the efforts of a bee over a dead comrade would listen seriously to such an over statement.

Blurts (p. 86).—Is the intention of this old writer to suggest that volleys of musketry should be fired at the bee, or that the bee would ignore volleys aimed at the man? Mr. Smallwood well says, "Poor bee." But what a picture the old writer paints of the bee's devotion to its object.

The Problem of Selection (p. 93).—Whilst agreeing in the main with what "D. M. M." says, I doubt if the process of selection is fairly attempted by the majority of either farmers or bee-keepers. The former are very apt to realise upon any good stock they may happen to breed, and to keep the second best for reproduction. As for their poultry-keeping, a large proportion of their birds are merely consumers, and mongrels at that. There appear, however, to be signs of an awakening. Bee-keepers do little better. I am speaking, of course, of the general run, but their problem is more difficult. For one thing, they have little or no control over mating, and the best queen may produce scrub progeny. Judgment can only be properly passed upon a queen after her progeny have proved themselves. Were I queen-breeding upon a large scale, I would only be satisfied with good mothers of good daughters. But such queens cannot be cheap in the popular sense, and there must always be a limited supply, so that the next best thing is to have good daughters of a good line. Curiously enough, the best mother queens do not always conform to the popular ideal of a large queen. A few of the best queen mothers I have had have been somewhat undersized but active, and not a little difficult to find in autumn.

Microscopic Measurement (p. 97).—If the special eyepiece of the microscope is simply cross-lined, and micrometer screws are fitted to the stage, dimension can be obtained very exactly. One of the lines is brought to the edge of the object, and a reading taken. The stage is then moved and another reading taken from the other side of the object. Readings are taken from the divided head of the screw and a scale. I have access to such a machine for measuring fine engineering limits, readings being obtainable to the $\frac{1}{1000}$ of a millimetre, or less by estimate. This instrument is made by the Cambridge Scientific Instrument Co., and I see no reason why a similarly operated stage should not be fitted to an ordinary microscope.

HIVES.

(*Continued from page* 118.)

There are many good points in the "Combination" hive, which is, however, awkward to move about and quite impossible as a hive for the heather. It is, however, convenient to examine, the dummy can be pushed out of the way, leaving ample room for manipulation of frames; combs and cappings can be cleaned up by being placed behind a dummy at the back of the hive. If the hive is divided into two a nucleus can be started at the back, if a small entrance is made for the bees there, and when the queen is fertilised and laying, and after the honey-flow is over, the nucleus can be united to the stock in the front after the old queen has been removed; or if a new queen is not needed she can be utilised elsewhere. When packing for winter, the frames can be pushed right to the back of the hive, and a dummy placed in front of them, which will prevent, to a great extent, the sun's

rays being reflected to the bees when snow is on the ground, and when, in all probability, they would be chilled were they to venture out. Stocks usually winter well in a "Wells" hive, though occasionally the bees will desert one side of the hive and unite with those on the other. Then when one division decides to swarm, the fever is frequently communicated to the other side, and they issue at the same time. The best use I have been able to find for this hive is to divide it into five compartments, and to use it for nuclei, and although I have had some trouble through queens getting together, owing to badly-fitting division-boards, on the whole the plan is a success. There is certainly a great saving of heat. I have also tried Simmins' "Conqueror" hives, both the single and double ones and although bees winter and work well in them, on the whole I do not like them. These hives are constructed with fixed outer casing, the brood-chamber and supers being suspended by strips of wood fixed on the inside of the outer case. Below the brood-chamber and between it and the supers is a bee space, none being allowed between the bottoms of frames and of the inner bodies. When examining a vicious stock in one of these hives it is most difficult to keep control, as the bees can issue from below the brood-chamber and all around it, as well as from the top. If the brood-chamber is left in position when examining, the fixed hive sides hamper free movement of the arms, while, if drawn out, there is some danger of the queen falling on the ground and being either lost or trodden on. Supers cannot be cleared of bees by the use of the super-clearer, unless these are taken off the supports and placed directly upon the clearer, and if this plan is followed, numbers of bees will be killed, owing to the absence of a bee-space below frames. If a super-clearer is placed in position on the brood-chamber, and the supers left on their supports, the bees can issue at the space below the brood-chamber, and re-enter the supers at the space between them.

I have seen, and intend to try a plan which is followed to some extent in America, and which is called there the tenement system. It is that of a small shed, constructed to hold three stocks, each in a separate body-box, with a small space between, which allows room for manipulation, and high enough to allow of three shallow supers being in use at the same time. One entrance is at the front, and one at each side. The roof is hinged at the front and the back is detachable. Many of the advantages of a double-bodied hive are secured by the use of this shed, while the cost is considerably less than that of three hives, but it is not easily moved about on account of its size and weight.

While I believe that the "W.B.C." hive is the best and most convenient of any pattern manufactured in this country, I think that for out-apiary work it is improved when fitted with reversible lifts. I have had in use for some years two hives made on the "W.B.C." principle, with this difference. Instead of all lifts being fitted with plinths, a 12in. lift is made so as to telescope over the body when arranged for winter, thus reducing the surface offered to strong winds and lessening the danger of the hive being blown over. A 9in. lift is made with plinths to fit on the deeper one below, giving room for three supers and plenty of wrapping above. The roof is flat, with a slope from front to back, and is found convenient for use as a hiving board or as a temporary table. I find this pattern most convenient, the arrangement of the lifts saves me the trouble of either carrying them home after the season is over, or of finding storage near the apiary. In conclusion, I would advise the adoption of the "W.B.C." hive, and if for use in an out-apiary, am confident that the reversible lift will be found satisfactory.—H. H. Brook.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Experience—and a Veil.—Mr. Chadwick, one of the great Californian bee-kings, gives in *Gleanings* the following interesting tit-bit: "Dispense with a veil altogether, or almost. That was my idea at the start, and I laughed at my uncle for wearing one so constantly, but he said 'You will come to it.' The first day of extracting I rushed out smoker in hand, but very promptly I rushed back, perfectly in love with a veil as I have been ever since. I don't care how gentle bees are, if they get stirred up there will be a good demand for a veil." As I mean to deal with the subject of wearing veils, I will at present make no further comment. Mr. J. E. Crane also deals with the veil question on page 109, in a way which will appeal to many. "Darn a veil! To have that veil everlastingly between our mouth and a nice tit-bit of honey, or a fat strawberry, or a plum, or a cluster of grapes is provoking."

Selecting a Good Queen.—Mr. Quirin, the queen breeder, has a short but valuable contribution on valuing a queen. "You can no more tell about a queen from her looks than you can about how far a toad will hop from its looks. You

can tell if it is of good size, if it is properly proportioned, also if it is spry and active, and we can make a good guess whether she is laying or not, but for anything else we must go to the hive. There I would not even ask to see the queen, but would judge her by her works. There is probably no one quality that pleases the masses more than an extraordinarily prolific queen. The larger the queen the better pleased is the customer, but size does not necessarily mean prolificness. In fact, it often happens to be just the contrary. The following are desirable points in a breeder: Solid combs of brood, not too early in the spring (real early brood-rearing often causes spring dwindling), and a breeder whose bees are reasonably gentle (not harmless as flies), just reasonably docile, which will cap honey white, and fill the boxes out plump, even if the flow is a light one. Then, of course, we want bees that swarm as little as possible." These wise words from a man of such extensive experience are of the very greatest value.

Legislation.—The Editor of *The American Bee Journal* in giving a "washing" to some of our opponents of inspection, concludes "There is no doubt that laws are needed, and that where they are properly enforced by competent men they do a great deal of good, so it is out of the question to agree with this writer (Bartlett) about the inexpediency of laws on bee-diseases, just because their enforcement may be entrusted to incompetent men. This applies as well to laws on any other subject where questions of health are involved. The improper enforcing of a law does not make that law improper."

Foul Brood Odour.—The inevitable has followed. Long ago I made a strong protest against the misuse of terms in naming brood diseases. One writer says, just as we would do, of virulent foul brood: "The poorest quality of glue is quite fragrant in comparison with an advanced stage of European foul brood." Another replies that "not only is it not possible to detect the disease by an odour at the entrance, but not even if the diseased comb be held close to the nose." Dr. Miller, Mr. Harris, Mr. Pettit and others hold dissimilar views. Mr. Sladen comes in fresh from the homeland and tells them what we know here. "In England a stinking smell is considered one of the chief symptoms. In a case where only fifty larvae were affected, an extremely strong and penetrating odour was given off—a 'gamey' smell." Not only on this point do our cousins confuse us not a little, but the ropiness always typical of virulent foul brood with us, is said to be absent in this class of disease on the other side. It never is with us.

Parcels Post.—Live bees, as I foretold from our experience on this side, are not to travel successfully per post to judge by the following: "The expected has happened. Bees sent by parcel post in a poorly made cage *broke loose!* Chaos!!"

An Interesting Biography.—*The Australasian* has begun a series of the lives of prominent bee-keepers in the Southern Hemisphere with that of the "father" of scientific bee-keeping in Australasia—Mr. Isaac Hopkins. A Londoner by birth, he was born within the sound of Bow Bells so long ago as 1837, so he is now 76, yet hale and hearty. One can gather the trying times bee-keepers had of it when he had to trust to such literary food as "Cotton," and the "Times Bee-Master." The editor calls him the pioneer of bee-keeping in New Zealand, if not indeed in Australasia, and declares that it is through the influence of such men that bee-keeping has been made so interesting and easy for the present generation. Mr. Hopkins in last "A.B.J." deals with an article of mine in a former issue, and differs with one or two of my conclusions, but if he notes that I was dealing mainly with winter ventilation, and he treats of summer, he may change his mind. His climate and mine differ, too, as the editor pertinently points out. In any case, he has an answer pat to hand on page 84, where Mr. Wesley Foster records his experiences as favourable with upward ventilation, unfavourable where this was not secured; and he concludes that where sealed covers had even a small hole in the centre for the passing off of moisture, bees are infinitely better fitted to survive dry and healthy than where this provision is cut off.

Twelve-Frame Hives.—Several Canadians are advocates of these large-sized hives, as opposed to eight- or ten-frame ones. Mr. Holterman, when he purchases bees in the latter, discards the hive and transfers the frames into a twelve-frame hive using ten frames as a super over this, wider spaced to fill out the chamber. Mr. J. N. Clark, in *The Canadian B.J.*, advocates that this hive, properly managed, is practically a non-swarmer.

Women Bee-keepers.—Last issue of *Gleanings* is a special ladies' one, and no less than sixteen writers of that sex have contributed to its pages. Did space permit, I might quote extensively words well worth repeating, but I must be content at present by only giving the Editor's expressive summary—"No one can say, now, that women do not make good bee-keepers."

Queries and Replies.

[8614] *Removing Bees from Wall of a House.*—The occupier of a house some three miles from here has a stock of bees which settled itself last year behind the tiles in the side of the house, and he has offered them to me. How shall I remove them, and how soon can this be attempted? The bees are located about 5ft. from the ground, and this morning were very busy taking in loads of pollen. By reading old "B.B.J.'s," I find this plan: Remove the tiles and subdue the bees, expose the nest, cut out the combs one by one, brushing the bees into a skep or box, taking care to secure the queen. Supposing this to have been done, would it do to invert the skep *on the ground*, brushing the rest of the bees off in front, or should it be nearer the old nest? Would the flying bees find their way to it if it were left on the ground till the evening? I presume it should be done on a fine, warm day, but how could one prevent the brood from getting chilled? Would not a table be a good thing to stand the skep on?—B., Lewes.

Reply.—The work should be done in April on a fine, warm day. Provide a box to put the combs into, as you cut them out, and cover them over to prevent the brood being chilled. The skep containing bees and queen should be placed over the position the bees occupied, and at night all will collect in the skep and can then be taken away and hived in their new home on the combs which have been tied into frames.

[8615] *Moving Bees.*—I wish to move my bees nearer my home, as they are now three miles away. I have found a place, but do not think it is more than two and a half miles as the "bee flies"; is this essential at this time of the year, also what precaution can I take for moving a stock about half a mile? I have read somewhere that they have to be closed up for a time. Unfortunately, the new location is near the road, and I have now been told that boys and young fellows have been a great nuisance to this garden, breaking the hedges and stealing the fruit (it is some distance from a dwelling, although comparatively near the town), and that they would probably stone the hives, and would not stop at turning them over. Can you tell me from your experience, if people do interfere with bees, or does their natural fear keep them from it?—I. S., Braintree.

Reply.—(1) Two miles is about the usual flight, but (2) you can move them now without fear of loss. (3) Unfortunately, not invariably. This is always a danger in having an out-apiary away from any dwelling and near a town.

[8616] *Changing Site of Apiary.*—I have had what I think would be considered a fair success with my bees, which I partly owe to the help of the "B.B.J.," and the "Guide Book." All my stocks have come through the winter well, and seem healthy and strong, but I find that I shall have to move them either to another part of my garden or about a quarter of a mile away. I shall esteem it a favour if you would advise as to the best way to prevent loss of bees, as in either case it will have to be done in one move. I thought of confining the bees to their hives for a week or so by covering entrances with perforated zinc. Would this plan answer?—One in Trouble, Suffolk.

Reply.—If the bees are moved at once there will be no loss. On no account should you confine the bees as you propose.

TRADE CATALOGUE RECEIVED.

E. H. Taylor (Hive Works, Welwyn, Herts).—This is, as usual, a well illustrated catalogue, everything that the bee-keeper needs will be found listed in its pages. Mr. Taylor has built a new factory equipped with the most modern machinery, and claims to be able to despatch goods same day as the order is received. He invites bee-keepers to pay him a visit and see his factory and apiary in which every breed of bee is kept. The catalogue also contains a selection of poultry and fruit-growers' appliances, and is well worth perusing. It will be sent post free upon receipt of post-card.

WEATHER REPORT.

Westbourne, Sussex.

February, 1913.

Rainfall, 1·59 in.	Minimum on grass, 20 on 23rd.
Below average, ·41 in.	
Heaviest fall, ·54 on 1st.	Frosty nights, 10.
	Mean maximum, 45·8.
Rain fell on 10 days.	Mean minimum, 35·7.
Sunshine, 88·4 hrs.	Mean temperature, 40·7.
Below aver., 1·3 hrs.	
Brightest day, 21st, 8·5 hrs.	Above average, 1·9.
	Maximum barometer, 30·647 on 12th.
Sunless days, 8.	
Maximum temperature, 52 on 4th, 7th, 11th, and 27th.	Minimum barometer, 29·717 on 1st.
Minimum temperature, 29 on 19th.	

L. B. Birkett.

Notices to Correspondents.

V. W. (Crowborough).—*Ants in Observatory Hive.*—Sprinkle powdered naphthaline wherever the ants are in the room and they will disappear. The hive should be thoroughly cleansed and disinfected before using again.

A. C. (Greenock).—*Preventing Increase.*—(1) If you do not wish to increase your stocks use a "Brice" Swarm-catcher. If you watch our Answers to Correspondents column you will probably see if "Isle of Wight" disease breaks out in your neighbourhood, as should specimens be sent to us for examination we should reply therein.

J. S. (Carlisle).—*Smoker-fuel.*—We do not know of anything that will retard the burning of corrugated paper. The best results are got by using alternative strips of ordinary thick brown paper with the corrugated paper.

S. P. K. (Keymer).—*Spacing Frames.*—If you read the "Guide Book" carefully, you will see that to close space the frames, to prevent drone-rearing, it is necessary to withdraw alternate metal ends to the end of the frame, then push all up together, and you have the $1\frac{1}{4}$in. space. To get the $1\frac{9}{20}$ spacing all that is necessary is to push back the metal ends from the end of the top bar, close up to the end bar. In your case use the $1\frac{9}{20}$ spacing right along; wide ends should never be used in the brood-chamber, they are for shallow-frame supers only.

J. B. R. (Essex).—*Chapman Honey Plant.*—The botanical name of this plant is *Echinops sphærocephalus.*

Suspected Disease.

G. D. (Northampton).—(1) The comb contains pollen only, but the bees have died of "Isle of Wight" disease. (2) Burn the lot; it is not worth while running risks by extracting the honey for household use.

X. Y. Z. (Suffolk).—(1) The bees show signs of "Isle of Wight" disease. (2) The arrangements of the entrance, the floor-board, roof, thickness of material, differ in the two kinds of hive.

G. H. C. (Petersfield) and T. C. S. (Northants).—Bees have died from "Isle of Wight" disease.

Head Gardener (Pontefract).—There is nothing wrong with the combs. They contain mouldy pollen only. From their appearance we should say bees died of disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

STANDARD SIZE BAR FRAME BEE HIVES for sale, 5s. each, with second storey for extracting, nearly new, and quite clean.—R. ILLMAN, Nurseryman, Strood, Kent. v 56

FOR SALE, ten dozen screw cap jars Light and Medium Granulated Honey, Cheshire B.A. label, second prize Chester, 1912, 9s. 6d. dozen, f.o.r.—A. R. COPPACK, Shotton, Chester. v 63

CANADA.—For sale, well built House, stable, sheds, and acre of ground, with Apiary of Italian Bees, good clover location, opposite station, will work bees on shares this year, plenty of work in neighbourhood.—ERIC MILLEN, Government Apiary Inspector. Ontario Agricultural College, Guelph, Canada. v 42

SEVERAL good, healthy lots of Bees, on frames, and a few lots in skeps wanted.—Write, COOPER, Lee, Yarmouth, I.W.

STRONG, HEALTHY STOCK, in single walled hive, two lifts, section rack, 30s.—202, Willow-avenue, Edgbaston. v 32

BEES.—Old English, on Standard frames, and combs wired, guaranteed healthy, no disease in this district, price 25s. and 30s.; travelling boxes returned carriage paid.—F. A. BEAN, Snaith, Yorkshire. v 39

SELL, or EXCHANGE, "Transactions of the Entomological Society of London," complete for 1908, '9, '10, '11, and '12.—HERROD, "B.B.J." Office, 23, Bedford-street, W.C. v 90

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, 5th, and 7th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

CHAPMAN Honey Plants, to blossom 1913, dozen 2s. 6d., six 1s. 6d.; seed, 6d. and 1s.—JOHN P. PHILLIPS, Spetchley, Worcester. v 4

LARGE, MODERN BEE-HOUSE FOR SALE, cheap; also Hives and Skeps used inside; inspection invited.—J. CHAWNER, Desford, Leicester. v 68

HEALTHY BEES WANTED, on frames, and in straw skeps; also natural Swarms during the swarming season.—PRYOR, Breachwood Green. v 69

WANTED ALIVE, one buck and three does, Wild Rabbits, for making warren.—Particulars to HERROD, "B.B.J." Office, 23, Bedford-street, Strand, W.C.

FOR SALE.—Five 10-bar frame hives, with frames, drawn out foundation and queen excluders; five shallow frame boxes fitted with frames and drawn out foundation; five supers, with waxed sections, 21 each; three supers, and odd sections (some in flat); four feeders, and a quantity of metal ends, wide and narrow; one 8-bar frame hive, and several frames, and smoker and bee clearer; all believed to be free from foul brood, 35s. the lot.—REV. G. M. EVANS, Packington Rectory, Ilminster. v 70

DALMENY REGENT SEED POTATOES, good cookers, one year from Scotland, 4s. 3d. cwt., cash with order.—KEEVIL, Ockley Manor Farm, Hassocks, Sussex. v 67

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

ANNUAL MEETING.

The annual general meeting of members was held in the Lecture Hall of the Zoological Society of London, Regent's Park, London, on Thursday, March 27th, 1913. Mr. T. W. Cowan presided. The attendance was excellent, the facilities afforded by the meeting being held during the holidays was taken advantage of by many living at a distance, members from Sheffield, Doncaster, Nottingham, and Ipswich being present, while a large number of letters expressing regret at inability to attend were received.

The minutes of the previous annual general meeting, held March 21st, 1912, were read and confirmed.

The Chairman then said: "You have just heard the minutes of the meeting held last year, read. I have much to say again in favour of the work done during the past twelve months. The year before was good, but I think you will all agree with me that the work done during 1912 is much better than the preceding one. (Applause.) I must say that the representatives from the affiliated Associations have attended very well and rendered to the Council invaluable service; it is only in this way that the Council can keep in close touch with the affiliated Associations, and this was what they are most desirous of doing. (Hear, hear.) Several of the associations have not taken advantage of their right to participate in the management of the British Bee-keepers' Association, but I hope in the future every association will realise that they are an integral part of the parent body, and make an effort to take advantage of that representation to which they are entitled.

"The number of members has reached the record number of 542 as against 429 last year—(applause)—the highest number since 1884, when the membership was 502, and a number of members have joined since the report was printed.

"The next point is with regard to legislation, which has not come on so speedily as was anticipated, the reason, known to most bee-keepers, being on account of the Government having so much work on their hands—Home Rule, Mental Deficiency, Disestablishment, &c.—they had no time to devote to bees. However, the Bill, after passing the second reading, had to be withdrawn; it was now hoped that it would be passed before the end of the year. Probably, the withdrawal was a blessing in disguise, as several amendments, strengthening the Bill, have been added, and it would be brought in again this session.

We had a letter a day or so ago from Mr. Runciman, saying that the Bill would be brought on at once—(loud applause)—and in to-day's BRITISH BEE JOURNAL it would be seen that in reply to a question asked in the House of Commons last week, Mr. Runciman said that the Bill would be re-introduced this week, or before the end of next week. (Loud and prolonged applause.) Many of the affiliated Associations have passed resolutions in favour of this legislation being hastened, and it would be helpful if a resolution to the same effect could be passed presently by those present at this meeting. (Applause.)

"With regard to the finances, I do not think I need trouble you very much about this. The balance-sheet, which has been posted to every member, will show very clearly that we are in a sound financial position. (Applause.) The balance at the bank of £190 16s. 8d. is larger than the Association has ever had before, and the same applies to the net assets of £470 4s. 7d. Great credit is due to the Finance Committee for this satisfactory condition of affairs.

"The Development Fund has been in operation for some little time. An apiary has been established in the Zoological Gardens, lectures have been given; and also, manipulation of the bees taught. Winter lectures have also been given, all of which have been well attended, and no doubt these will be continued. Lecturers have also been sent out to various counties, to deal with special subjects, where an average attendance of 200 has been obtained.

"Mr. Herrod's report shows that he has continued his work at Swanley and that the fresh stocks of bees obtained in frame-hives, to replace those which died of 'Isle of Wight' disease, are alive and doing well.

"The exhibitions were not up to the usual standard, but this was not surprising considering the bad season.

"More members are now insuring than formerly, which is also a healthy sign.

"I therefore think we have a right to congratulate ourselves on the splendid position of the Association, and I have much pleasure in moving that the report and balance-sheet, as printed, be accepted." (Applause.)

The motion was seconded by General Sir Stanley Edwards, who said: I am pleased there is no point for me to criticise, everything appears to be satisfactory. I think it proves the result which was anticipated when there was an agitation for reorganisation. (Applause.) Some of the members then said we have got a new secretary, let him have a chance, and to-day, Mr. Chairman, you tell us what the result of that chance is, and we also see it in the splendid report we have before us. (Applause.)

There was no comment on the report, and the resolution was carried unanimously.

Mr. Hayes proposed, and Mr. Bocock seconded, a very hearty vote of thanks to the retiring Council and officers. This was carried unanimously.

Mr. Reid proposed the re-election of the vice-presidents, hon. and corresponding members, hon. treasurer, analyst, and solicitor for the year 1913. This was seconded by Mr. Eales and carried.

Mr. Cowan then explained that with a Government grant it was necessary to have a chartered accountant, and through the instrumentality of Sir Ernest Spencer, Mr. Ralph Morrish had kindly consented to act as hon. auditor. He proposed a very hearty vote of thanks to Mr. Sanders, who had so ably carried out the duties for the Association in the past. This was seconded by Mr. Reid and carried.

Mr. Cowan proposed a vote of thanks to the two members of Council who had resigned, Mr. Andrews who had been on the Council about twenty years, and Miss K. M. Hall, who had been with them some considerable time. Mr. Reid seconded, and the resolution was carried unanimously.

Mr. Sanders proposed the re-election of the Council for 1913, as printed on the agenda, with the addition of the two new names. This was seconded by Mr. Jefferies and carried unanimously. The names are as follows: R. H. Attenborough, T. Bevan, T. W. Cowan, General Sir Stanley Edwardes, C. L. M. Eales, Dr. T. S. Elliot, O. R. Frankenstein, Miss M. L. Gayton, H. Jonas, J. B. Lamb, A. G. Pugh, H. P. Perkins, W. F. Reid, A. Richards, Miss M. D. Sillar, Sir Ernest Spencer, Captain F. Sitwell, J. Smallwood, Colonel H. J. O. Walker, E. Walker, and E. Watson.

Mr. Cowan then said that closed the ordinary business of the meeting, but if anyone desired to bring any matter forward they could do so.

Mr. Faunch proposed, Mr. Alden seconded, and it was carried: "That the members of the British Bee-keepers' Association regret that through want of time the Bee Diseases Bill has been withdrawn, and urge upon the President of the Board of Agriculture and Fisheries the necessity of re-introducing and passing a Bill early this session."

This concluded the business of the meeting.

Report of Council meeting and conversazione will appear next week.

SUFFOLK B.K.A.

At the annual meeting of the Suffolk Bee-keepers' Association, held in March at Bury St. Edmund's, the Rev. D. Lloyd Jones, of Cavendish, presiding, a membership of 206 was reported.

In presenting his report Mr. W. G. Goddard the expert, said that the early part of last season opened well, and for about six weeks much honey of excellent quality was stored. Some members were of the opinion that the good weather would continue, and took honey away too freely, and bad weather following, disastrous results were experienced. During the heavy rains several members had suffered: in one instance stocks were drowned, and in another they were only rescued with great difficulty. During his inspection he had found wax moth very prevalent. He had found one or two cases of foul brood, which had been promptly and successfully dealt with; but no trace of "Isle of Wight" disease during his inspection. During the year 1,500 colonies had been examined.

The President, the Earl of Stradbroke, and Vice-Presidents, with the addition of the Marchioness of Graham, were re-elected. The Committee were elected as follows:—The Rev. A. W. Gray, Dr. Tidbury, Lady Farren, Mrs. E. P. Ridley, Miss V. D. M. Durrant, Mr. J. B. Chevallier, Mr. E. T. Goldsmith, Mr. C. Whiting, Mr. C. Block, Mr. J. A. Smith, Mr. W. H. Hudson Mr. Jos. E. Smith, Mr. S. Wright, Mr. H. Hurn, and Mr. W. T. Barton.

Mr. S. Wright said he regretted very much that Mr. J. E. Smith was giving up the secretaryship. The Society were losing a valuable support, and he expressed the gratitude of the Society for the time and energy he had put forward in their interests.

The Secretary proposed that Mr. O. C. Jones should take his place. Mr. Jones had been an active member of the Association, and had the interests of the Society very much at heart.

This was agreed to.

Mr. W. G. Goddard was again appointed expert. Owing to the difficulty of getting to every member just at the busy time it was decided to appoint Mr. S. Wright, of Bury, as assistant expert for the Bury district.

A resolution was passed expressing regret that the Bee Diseases Bill had been dropped. In the opinion of their Association, and bee-keepers generally, such a measure was urgently needed.

A vote of thanks was accorded the Chairman for his services during the year.

—*Communicated.*

LINCOLNSHIRE B.K.A.

The annual general meeting of the Lincolnshire Bee-keepers' Association was held in the Banqueting Room, Town Hall, Grimsby, on Saturday, 29th March.

There was a record attendance, about 120 members and friends being present, many of whom had travelled long distances to the meeting. Major H. J. F. Crosby presided.

The Hon. Secretary presented the report and balance-sheet for 1912. The latter showed a record balance of £29 4s. 2d. to the credit of the Association. The report stated that the season of 1912 opened auspiciously. Bees had wintered well, and stocks were so forward that hives were supered at an exceptionally early date. During June and the succeeding months, the weather conditions were wretched, so that the yield of honey in the county was much below the average. The "Isle of Wight" disease has made its appearance in several parts of the county, with disastrous results. The committee deeply regret the great loss the Association has sustained through the death of three of its prominent workers—Mr. F. H. K. Fisher (Ewerby), Mr. J. Palfreyman (Gosberton Clough), and Mr. R. Thorpe (Swineshead).

The Right Hon. the Earl of Ancaster was again elected president, and the other officers were re-elected.

Mr. David Seamer, Grimsby, was appointed delegate to the London meetings of the B.B.K.A.

The following resolution was unanimously passed: "That this general meeting of the Lincs. Bee-keepers' Association regrets the withdrawal of the Bee Diseases Bill in the recent session of Parliament, and urges that every endeavour should be made to obtain the re-introduction of the measure in the present session."

Medals won in the members' honey classes at the county show were presented by the Chairman to the successful competitors.

A most interesting and instructive lantern lecture on "Diseases and Enemies of Bees" was given by Mr. W. Herrod, F.E.S., Secretary of the British B.K.A.

A hearty vote of thanks was accorded to Mr. D. Seamer for making such excellent local arrangements, and to Major Crosby for presiding. Major Crosby kindly entertained the company to tea.

There was the usual drawing by members of the Association for useful bee appliances, kindly given by friends.—J. H. Hadfield, Hon. Sec.

MR. D. M. MACDONALD.

We are pleased to announce that Mr. D. M. Macdonald has just been appointed Instructor in Bee-Keeping to the North of Scotland College of Agriculture, Aberdeen. We congratulate Mr. Macdonald on his new appointment, and the College on securing the services of one so eminently fitted for the position. Bee-keeping in the North of Scotland should progress rapidly under his care. Mr. Macdonald holds a First-class Expert certificate of the British Bee-keepers' Association.

SUSSEX B.K.A.

The Sussex B.K.A. are holding their annual meeting on Wednesday, April 9th, at 3 p.m. in the Royal Pavilion, Brighton, when the Mayor of Brighton will preside.

A lecture is to be given after the meeting by Mr. C. T. Overton, and a discussion will follow. The Committee hope that members will endeavour to attend, and bring their friends.—C. A. Overton, Hon. Sec.

LEGISLATION.

The following are typical of many communications we have received:—"I have taken your hint and written as suggested in to-day's 'B.B.J.' I hope crowds of others will do likewise. If they could realise the devastating effects of the 'Isle of Wight' disease as, in Royston, where my son lives, and around far and wide, they would not hesitate a moment."—C. N. W.

I may say that to-day I have written to the President of the Board of Agriculture and to our M.P. in favour of the proposed Bee Diseases Act. Unless bee-keepers bestir themselves now, how can Parliament know that there is a desire or need for legislation, and how else can we get restricted areas for "Isle of Wight" disease? If not done now it may be years before a Government will give the time necessary again.—Joseph G. Nicholson.

REVIEW.

Garden Work: A Practical Manual of School Gardening; by William Good, F.R.H.S. (London, Blackie and Son, Ltd., price 3s. 6d. net.)—This is a book, the need of which has been sorely felt by the gardening teacher who wishes to teach gardening intelligently for its own sake. From personal knowledge of the author, who was one of our colleagues at the Horticultural College, Swanley, some years ago, we can say that no one is better qualified to write on this subject: his wide experience of teaching has enabled him to put into the book just what is required, in simple language devoid of the troublesome scientific technical terms generally employed by those who write on gardening subjects.

At the present time, when the teaching of rural industries has such an important place in the curriculum of day schools, a work of this description is invaluable to the teacher, and as so many of our readers

are schoolmasters or take an interest in teaching, we are sure the book will be most useful to them. We notice, in several of the photographs of school gardens, bee hives in the distance, showing the close alliance of bee-keeping and horticulture. The book, which is beautifully illustrated, may be had from this office.

DEATH OF MR. F. H. FISHER.

It is with extreme regret that I have to record the death of Mr. F. H. K. Fisher (of Ewerby), a prominent Lincolnshire bee-keeper, who died on March 16th, after a short illness, at the age of fifty-seven. Before coming to live in Lincolnshire, Mr. Fisher acted as Hon. Secretary of the Nottingham Association, and for his services to that Association he was made an honorary life member. He took a prominent part in the work of the Lincolnshire Association. He was an active member of the committee and did useful work as lecturer, expert, and judge.—J. H. HADFIELD, Hon. Sec., Lincs. B.K.A.

[The junior Editor, as a personal friend of the late Mr. F. Fisher, extends his heartfelt sympathy to the family and friends of the deceased gentleman. The news came as a shock, for this sad loss removes a dear and valued friend. One by one the links with the past are broken, as the "Great Architect of the Universe" calls his labourers to eternal rest. During his busy life, Mr. Fisher has done much for bee-keeping, and there are many living to-day who had their first lesson and their interest first aroused through his genial talks about bees and bee-keeping.]

AMONG THE BEES.

By D. M. Macdonald, Banff.

BEE VEILS.

The veil I prefer is a simple piece of fine black silk net made in the form of a sack, with an elastic band at the top to hold it tight on the hat or cap, so that it will remain in position and allow no bees to gain admittance from that direction. As a rule, the veil is left lying loose there, but ready at any moment to be drawn down over the face when need arises. One is never quite certain but that its services will have to be requisitioned in an unexpected emergency. When not in use, it folds up into very small space, and can be carried in the vest pocket. The common net veil, generally green in hue, with wire cloth of a black or dark colour round the face part, is a very serviceable article, being, when properly adjusted, thoroughly bee proof. The open wire-work makes observation easy, and the stiff substance keeps the veil well out from face and neck. Care should be taken to keep this style of veil dry: if it gets wet don't lay it away until the moisture is dried off, otherwise it rusts, and then the brown shade the black assumes considerably retards vision. A heavy veil like this makes one feel uncomfortably warm during a period of excessive heat, therefore the lighter form is much more comfortable.

The subject of the use of a veil goes far deeper down than the question of mere personal safety of the operator. We have to sustain our bees' good name, and even save them from acquiring an evil one. We have to think of the friends, neighbours, visitors., and members of our families, who are not pachydermatous—many of whom feel a sting severely, while to a few these painful inflictions might be a danger. I use a veil as seldom as most people during the greater part of the season, yet, immune as I have become from any ill-effects from quite a number of stings, I like to feel that the article is present if a call comes for its use, and I would deprecate the folly of some who boast that they never—*no never*—do or would, use a veil when manipulating bees. I find in going in amongst strange bees that one never knows just how they may behave until they have been tested, and I always make a point of ascertaining the disposition of these strangers before doing any examinations. I remember valuable stock may be near at hand, ladies of the household are almost certain to be frequenters of the garden, and children are often not far away. In these circumstances, treating the matter lightheartedly because I do not feel much when stung, would be most reprehensible.

In visiting an apiary of over 100 stocks in England recently, we four strangers had efficient veils handed us by the owner's "man," who also donned one. The subject of temper naturally came up in our conversation, and incidentally I discovered that in this model apiary not only did the proprietor wear a veil, but every worker *had* to use one. Further, no visitor, however experienced, was allowed entrance until he was presented with a veil, and I thought the regulation a very wise one. None of us had occasion really to use our veils as a means of defence, the bees proving quiet and thoroughly good-natured—but they were there if the need had come for their use. Now, this very fact gives confidence and steadies the nerves, as was proved in this very case. The last hives examined stood in a quiet corner, and were being fed to stimulate breeding. As some signs of robbing were manifesting themselves, the home bees were on their defence, and we were in danger of getting a warm reception as we stood near. Any nervousness on our part would have produced irritation, but when

we stood with veils down all perfectly still, we remained unmolested.

The late Captain Hetherington, the most extensive bee-keeper in America, always wore a veil himself, and made it an imperative rule that no man should inspect his hives without wearing one. Mr. Coggshall always wears a veil. Mr. Root, even when dealing with gentle races "always prefers to have a veil handy," because the sense of security enables him to work to much better advantage when protected than if he were in continual fear of a lance thrust from even a chance cross bee; and the Medina "boys" have always a veil available if not actually in use. Many American bee-men who manipulate bees extensively wear not only a veil, but also a blouse and pair of gauntlets; and I think I am correct in stating that our leading bee-expert dons a woollen jersey with the veil, thus making all but his hands almost impervious. After "fifty years among the bees," it is interesting to discover that Dr. Miller seldom goes among them without a veil. "I may not have it on my face," he says, "but it is on the hat, ready to be pulled down at any time"—just what I have been advocating. With these long years behind him he has not yet reached a point where he cares nothing for stings, and for the moment he feels the effect severely, yet an hour or so later he cannot tell where he was stung. This is exactly my own personal experience, and most bee-keepers tell the same tale.

When I see a bee-keeper wearing thick, heavily gauntleted gloves, armed above as if he had a steel vizor, helmet &c., and with twine or rope fastening the lower inches of his trouser legs, it lowers that man, in my estimation— as a bee-keeper. It makes me feel that there will be a gruesome slaughter of the innocents, that the frames will be banged and jarred, and that careless manipulation is inevitable. On the contrary, when I see a bee-keeper with a simple net veil covering his face I intuitively realise that there will be careful and gentle handling of frames, that bee life is considered precious, and that the most is done in a given time to diagnose the whole internal economy of the hive. The work is thorough because the manipulator can give his entire attention to it.

It is often a great relief on a warm day to shift up the veil from the face, even for a time. Early in the season, indeed, a veil is seldom kept down, because the bees are good-tempered, and do not often resent moderate handling. In a time of dearth, however, and about the close of the heather honey harvest with us, it would be folly to go much among them without the veil being drawn. When removing surplus it is injudicious to carry out the operation without being veiled. We may ourselves escape, but every rough handling at that time helps to make bees vicious, and treating them when only partially subdued may make even gentle bees regular demons. On the contrary, as every bee-keeper who has done much in the way of drumming bees, well knows, at no other time can they be handled like so many flies when properly subdued before the process begins. Even in this manipulation, however, the veil should be there until the temper of the bees has been ascertained. At swarming time, some tell us, bees never sting. I grant the occasions are rare, yet I have seen a rare stinging obtained even in such a case, but from other bees than those forming the swarm, I concluded. Fortunately, two out of the three present had veils handy. The third cleared high gates and other encumbrances with wonderful agility!

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

STRANGE BEHAVIOUR OF BEES.

[8398] The following facts have been handed to me by a bee-keeper of many years' standing, and who has been very successful with his bees. Up to the year 1911 his apiary numbered about forty stocks, and early in the spring of that year signs of the "Isle of Wight" disease made its appearance, and by the end of the season (with the exception of about six stocks) the whole apiary was wiped out, and these six remaining stocks succumbed early in the year 1912. The whole of the internal fittings of the hives were destroyed, and the latter scorched out and painted outside. The ground was turned over and cleaned, and every precaution taken to prevent another outbreak of the disease.

Early in June last year, six second swarms were put in some of the old hives, and in the position occupied by the previously diseased bees, the hives being first treated with Ayles' Cure. The bees worked with a will, and in six weeks the combs began to be filled with brood. During the bad weather the feeder was kept going freely. About this time all the stocks began to behave in a strange manner. The brood, from the larval stage to a fully developed bee, in a clean, fresh and healthy condition, was thrown out, and early in the morning could be picked

up by hundreds. This continued till the end of the season, and in the case of two stocks they became so reduced in numbers that little hope was entertained of their surviving the winter. The whole of the stocks had plenty of stores, and apart from the homicidal conduct, they should have become six strong colonies. There has been no sign of "Isle of Wight" disease, and up to a fortnight ago the bees were on the wing, and seemed as if they had got through the first stage of winter.

Your readers who have had their apiaries swept out by this blighting disease will be glad to have this information, and should brave the attempt to a new start, but what about the cold blooded business of last July and August, will you give your opinion, Mr. Editor?—J. E. PINDER.

[The only suggestion we can offer is that as the colonies became strong the heat of the hives disengaged fumes from the disinfectant which were too strong for the brood. Plenty of ventilation might have obviated this trouble.—EDS.]

NOTES FROM CORNWALL.

[8699] Bee-keeping is one of those undertakings that must be done well or not at all, and pressure of other work has prevented me for four years from regarding myself as a bee-keeper, hence the "B.B.J." has not known me as before. I have not, however, been without a stock or two of bees to keep up my connection with the interesting little creatures—these very marvellous inhabitants of our incomprehensible universe.

The stock that I have at present was obtained last summer from Mr. Stapleton, of Gwinear, and is descended from one of the fourteen stocks in his apiary that survived the epidemic of the "Isle of Wight" disease. The bees are in a straw skep on top of ten frames, the hive entrance is wide open, and up to the end of January the feed-hole in the skep was also left open. This treatment was tried as an experiment, and so far the bees are entirely healthy. At the end of January I closed the feed-hole with some cloth wrappings, because the roof had been blown off in a great storm and the skep exposed all night to the rain, but no apparent injury resulted to the bees. They are now carrying pollen in. I conclude that in Cornwall, at any rate, it is not necessary to pack bees up warmly for the winter, and that the more space and fresh air, within reason, that they are given the better for their health.

I am glad to see that in a recent editorial you approve of the retention of the skep. Some keep bees in skeps because of the artistic appearance of these straw bee villas, thatched with reed, and profit is quite a minor point in these cases. I must say that it is indeed a pleasant sight to see these quaint bee hives gracing the garden of an equally quaint old world cottage, and I have no sympathy whatever with those who would reduce bee-keeping entirely to a matter of £.s.d., or compel everybody to be measured with their own rule. Skeps are valuable for temporary purposes, such as winter homes, in even the most up-to-date apiaries; indeed, there is nothing so sure as that on the average bees will winter better in skeps than in frame hives. I have proved this many times. Foul brood can be got rid of without giving up skeps. Of course, old skeps may have to be destroyed periodically, but that is a different matter to depriving a bee-keeper of his freedom to use any pattern hive that his fancy and needs make agreeable to him.

I do not think that the entire destruction of diseased stocks is in all cases the best course. Mr. Stapleton suggested to me that it would be better to have an isolated apiary to which they could be removed to be cured. He contends that he could cure 90 per cent. of the cases of "Isle of Wight" disease—this may be open to discussion, of course. I do not like anything like a rigid enforcement of one idea in hygiene or anything else, we are always learning, and laws should be elastic and administered with common-sense.

I have noted many interesting articles in the BRITISH BEE JOURNAL recently.—W. J. FARMER, Cornwall.

[We are pleased to hear again from our correspondent, and to know that he has not lost his interest in the bees and the Journal.—EDS.]

AN INTERESTING OLD BEE-BOOK.

The other day I received from a friend a quaint twelve page pamphlet entitled: "The Cottager's Guide for the Management of His Bees, Upon the Depriving System," printed under the direction of the Suffolk and Norfolk Apiarian Society for gratuitous distribution amongst the cottagers. The pamphlet was dated 1832. The frontispiece shows illustrations of the various straw hives to be used, and also a box used as a substitute for a small hive. A perusal of the pamphlet shows how, even eighty years ago, bee-keepers were anxious to help each other, for we are told that: "Should any person into whose hands this little book may be given, find anything which he does not understand, or be unable to manage his bees as herein directed, he is particularly invited by the above society to call upon their secretary, Mr. J. H. Payne, of Bury St. Edmunds, who will feel pleasure in showing them his own bees, and to impart to

them every instruction as to the management of theirs."

The rules of the "Apiarian Society" are also very quaint; we wonder how many bee-keepers of to-day would like the imposition of rules 2 and 3. A perusal of the rules shows very clearly that it was a self-help society. Not only was instruction given but bees and hives were also supplied under the conditions which enabled the bee-keeper to commence without any outlay from his own pocket, payment being taken in honey when obtained from the bees. We give the rules as printed.

"(1) That the objects of this society are, to supply those cottagers with bees, who are desirous of having them; to impart the best method of management to those who are already in possession of bees; and to dispose of the honey to the best possible advantage.

"(2) Every cottager making application for a hive or hives shall, at the same, bring credentials of character from the clergyman or some other principal inhabitant of the parish.

"(3) The directions given in this book must in all cases be strictly adhered to.

"(4) The value of the stocks of bees supplied to be paid for by annual instalments of honey."

Chapter I. gives "directions for the purchase and placing of a stock of bees."

We are told not to have a bee-house or boarded covering for the hives, but to place each hive on its own stand facing south, and covered with a milk pan.

Chapter II. tells "The manner of placing the small hive or box, by which means fine honey may be obtained without destroying the bees." The operator is advised not to wear gloves, and the subjugator is a little smoke from the pipe, (ladies please note).

Chapter III. explains "How to expel the bees from the small hive or box," and is not a method we could follow today, for the bee-keeper is instructed to lift off the box and carry it some distance away and wait till the bees fly out. He is also advised to watch for robbers, therefore it would take several days to remove surplus. We are told "Comb honey sells at 2s. to 2s. 6d. per lb. and the profit from each hive is 30s. to 60s. yearly." They did well in Suffolk and Norfolk in those days.

Chapters IV. to XI. show that they had a good knowledge of bee-keeping, for precise instructions are given how to unite bees, both as swarms, casts, and stocks, how to feed, and to guard against enemies, the hiving of swarms, and even the form of knife to use for cutting out the combs is described. The pamphlet is interesting, and we enjoyed reading it, for it shows very plainly how careful in descriptive matter our forefathers were.—W. Herrod.

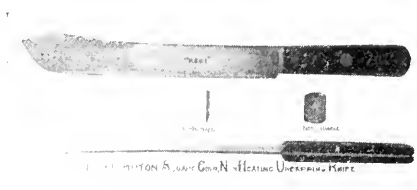
NOVELTIES FOR 1913.

THE "HAMPTON" UNCAPPING KNIFE (REG.).

Mr. Will Hampton, inventor of the latest uncapping knife, sends us the following particulars of his appliance, which should prove a boon to small bee-keepers, as it can be used without heating. He says:—

With the object of getting a more handy uncapping knife, experiments were made extending over a considerable period, and eventually the present knife was evolved.

It was not at first thought that heating could be dispensed with entirely, but by only grinding on one side and by getting the bevel at a certain angle, it was found that comb—even the newest made and in



THE "HAMPTON" UNCAPPING KNIFE.

hot weather—could be uncapped without any appreciable "drag" or undue damage to the cell walls. It was also found that to ensure cleanness of cut, a very stiff blade was required, but the tendency of the sheet of capping to adhere to this being very marked, the blade was thinned towards the end; this ensured the sheet of wax and honey leaving the blade, the form of construction, as it were, easing the wedging action of the knife. The wide and thinned end also serves as a "scalpul" to uncap the depressions on the surface of the comb. To give greater command over the depth of cut it was also found that a "square grip" was much better than a circular handle, and this was added, so making the whole the handiest uncapping knife on the market, and certainly one of the cheapest, having regard to the fact that only one knife is required to do effective work. The price is only 2s. 6d., and it can be had retail from all appliance dealers, and wholesale from Messrs. Wellman Bros. and Co., 42 and 43, Peascod Street, Windsor.

Queries and Replies.

[8617] *Increasing Stocks by Dividing.*—Will you please tell me if the following

plan of artificial increase would be successful:—Allow the stock to swarm naturally and hive it on the old stand, removing the parent hive to a fresh position and part the frames of brood with adhering bees into three or four lots, giving each part a capped queen-cell?—E. W., Coventry.

REPLY.—The plan you suggest is natural increase. You can follow it out, but you must not do more than divide the parent colony only. Even then, careful nursing will be necessary to make the two divisions into strong stocks.

[8618] *Irregular Combs.*—Last autumn I purchased a stock of bees on frames. The combs, I find, are worked out so irregularly in the frames as to render manipulation very difficult. I wish to get new combs drawn out in the brood-chamber to replace these. Would you advise me to raise the body-box and place underneath it another containing frames fitted with foundation, putting an excluder on top of this, when the queen has taken up her abode in that chamber?—BEGINNER.

REPLY.—Remove all the combs which do not contain brood, close up with the division-board and feed. As the colony becomes strong, insert a frame fitted with a full sheet of foundation in the centre of brood-nest, and repeat this operation as the bees gain strength. As the old combs get moved to the outside they will be clear of brood and can be removed.

[8619] *Death of Stock and other Queries.*—(1) I shall be much obliged if you will examine the bees I send and find the cause of death, as I have lost the whole hive through some cause. (2) What is the best bee for a beginner; also what make of hive would you advise me to use? (3) Would the combs from the stock which has died be good to put a swarm on; there is a little honey in them, some of it uncapped? (4) How many frames should a strong colony cover in the winter? We only use eight up here, would you advise more, or perhaps it is enough seeing our season is not so long as in the south.—GEO. G. HAY, Elgin.

REPLY.—(1) The bees have died of "Isle of Wight" disease. You must burn combs and all loose fittings, and scorch the hive inside with a painter's spirit-lamp. (2) Black bees are best for this country. The most suitable hive to use is that known as the "W.B.C." (3) A good colony should cover about seven frames in the winter. (4) In your district six frames would be about enough to winter on. If you succeed well with eight combs stick to that number. You might, as an experiment, try using ten in one hive.

[8620] *A Beginner's Queries.*—I am just commencing to "fit" out my bee hives, &c., for the season, and would be glad of your advice in the next issue of "B.B.J." (1) Is it advisable to paint the *insides* of the body-boxes and supers of all hives or not? (2) Would "Izal" be as safe and effectual to use as a disinfectant for brood-chambers, &c., as carbolic acid? (3) I have been advised to creosote the legs and *outside* bottom of hive-stands instead of painting them over again with white lead. I should have thought that the smell would be offensive to the bees for weeks to come even in the open? (4) What is the very earliest date, of course, weather permitting, on which I might examine the brood-combs, and place the bees in their new quarters after cutting out the queen-cells? I dread doing the latter, but I have no one here to help me. (5) I bought a lot of Limnanthus plants from an advertiser in your journal last fall. All the plants grew and thrived, and many were coming in flower some time ago, as I thought, providing early pollen, when some beast came along and nipped them nearly all away, although I had them well sooted, limed, and wire-netted, too! What distance ought Limnanthus to be planted out? I have some hundreds of nice young plants in my hothouse ready to put out in patches all over my garden, but it is too early yet, I suppose? By all accounts the bee-keepers' prospects in the Isle of Wight are bad indeed. Some who packed down a nice lot of colonies last fall find they have not one healthy hive left! In one case thirty have been lost, and a friend of mine has also lost every stock he had, and says he will never keep any more as long as he lives. In many cases, these people have been buying their bees and appliances locally, which, of course, under the circumstances, is a great mistake. Although I only restarted bee-keeping last spring with "W.B.C." hives and a completely new outfit, I sent away for my things, and am glad now I did so, as my bees seem going strong, and are as fit and well. I had to destroy one lot in the fall for foul brood, unfortunately.—JUVENIS CANIS, Ryde.

REPLY.—(1) There is no need to paint the *inside* of any part of the hive. (2) We should prefer to use carbolic acid. (3) Paint the legs instead of using creosote. (4) The earliest time for examination will be end of April. Plant Limnanthus out about 8in. apart. You could plant out any time now. It is very hardy and will grow and spread rapidly almost anywhere.

THE BEE.

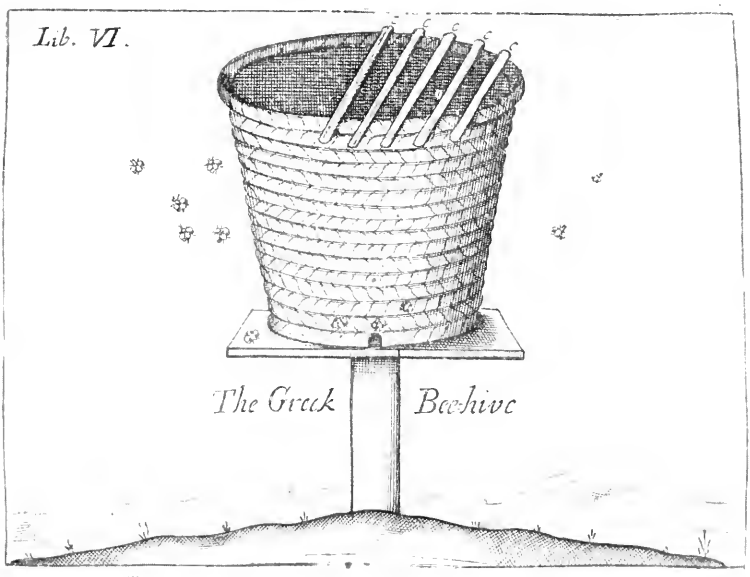
The careful insect midst her work I view,
Now from the flowers exhausts the fragrant dew,
With golden treasure loads her little thighs,
And steers her distant journey through the skies,
Some against hostile foes the hive defend,
Others with sweets the waxen cells distent,
Each in the toil her destin'd office bears,
And in the little bulk a mighty soul appears.—*Gay.*

Bee Show to Come.

June 10 to 13, at Windsor Honey Show of the Berkshire Bee-Keepers' Association, in connection with the "Royal Counties" Show. Liberal prizes. Schedules from D. W. Bishop Ackerman, 161, King's-road, Reading. **Entries close May 14th.**

to the sides, the tapering form of the skep enabling them to be easily lifted out when the attachments were severed. Similar hives are used to this day, and we have a picture of an apiary of such hives from Mount Hymettus. In present day hives the bars do not project but fit into a shoulder rebate in the top, so that the cover fits close. In John Keys' *Ancient Bee Master's Farewell*, Fig. 3, plate 1, is an adaptation of similar bars to a straw hive with parallel sides instead of tapering as in the Greek hive.

B. G. M. (Lanarkshire). *Bee Disease Legislation.* At present no one can prevent a bee-keeper selling hives and appliances which have been used for bees that have died of disease. If bee-keepers want legislation they must say so, and not be afraid to take a little trouble over the matter.



Notices to Correspondents.

Bookworm (Somerset).—The book you allude to is no doubt George Wheeler's *Journey into Greece*, published in 1682. It contains an illustration of the Greek Beehive in Book VI., page 412, a reproduction of which we give below. This is a straw skep wider at the top than at the bottom, and contains bars placed on the top to which the bees attached the combs. A flat circular straw mat was placed over them and a conical hackle covered the hive. There were no frames so the bees fastened the combs

Silly Suffolk (Ipswich).—*Bee-keepers' Associations and their Work.*—Write to the Secretary or Expert of the Association, and we are sure you will obtain the information you desire. The charge of 5s. for use of bees at the examination is quite legitimate, and is the price fixed by the B.B.K.A., as you will see if you procure the syllabus of examinations. The candidates can, if they wish, provide their own bees, but surely it is worth paying 5s. rather than having the trouble of packing and conveying (paying carriage) a stock of bees in a frame hive and also one in a skep, to the place where the examina-

tion is held. No association makes a grant towards the fees of candidates, this 5s. is only to cover expenses. By some the certificate is considered worth far more than the expenditure of this small sum, as we have known candidates to travel over six hundred miles to take the examination. Perhaps you set little value upon it, and think you should be paid for trying to obtain it. Things obtained for nothing are worth nothing.

E. M. (Linford).—*Mead.*—We have no fault to find with your sample of mead. It is of a good quality and will improve with age. The sample is remarkably clear and bright. You should use phosphate of ammonia and cream of tartar in all cases when making mead from extracted honey.

Maghew (Hailsham). *Formic Acid and Honey.*—Yes, this statement is one of the popular errors which are constantly being repeated by persons with little knowledge of the subject.

Boon (Corby). *Bees Distinguishing Hives.*—You might paint the porches different colours, which will make it easier for them.

Suspected Disease.

Lanarkshire.—Both lots have died from "Isle of Wight" disease.

W. F. E. (Southsea).—The bees were so dry that they crumbled to dust, therefore we cannot tell you what has caused their death.

T. M. (Biggar) and Vacuum (Beith).—The bees have died from starvation.

W. H.B. (Yorkshire); Nunquam (Lanarkshire); D. J. (Congleton); T. W. P. (Falkirk); W. S. Legge (Nunhead); G. W. R. T. (Kent); C. C. (Taunton); J. C. (Staffs.)—The bees have died from "Isle of Wight" disease.

W. J. B. (N. Devon); J. T. (Baildon).—The bees you sent were too decomposed for examination.

G. F. H. (Stanwell); A. H. H. (Thetford); H. P. (Leicester); D. B. (Penarth).—The bees were too dry for diagnosis.

M. R. K. (Colchester) and G. M. A. (Eastbourne).—The bees have died from "Isle of Wight" disease.

H. M. (Kent).—The comb is affected with foul brood of long standing. Burn everything but the hive, this must be thoroughly disinfected inside and out.

W. H. (Lanarkshire).—The bees were so saturated with honey that we could not examine them.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

FOR SALE, three healthy stocks of Bees, in W.B.C. hives.—KIRK, Balden-road, Harborne, Birmingham. v 82

FOR SALE, six dozen screw cap jars light granulated Honey, from own bees, 9s. 6d. dozen.—HOBBS, Camlot, Barnet. v 72

FOUR 28lb. TINS LINCOLNSHIRE HONEY, good flavour, 60s. cwt.; sample, 2d.—CRUST, London-road, Boston. v 77

½CWT. FINEST MEDIUM HONEY, 60s. cwt.; sample, 3d.—ROBERTS, certified expert, 5, Tonbridge-road, Maidstone. v 75

THREE HEALTHY STOCKS, with racks, drawn out shallow combs; any reasonable offer.—CAGE, Newton, near Burton-on-Trent. v 29

FOR SALE, 1cwt. dark Honey; what offer? sample, 2d..—ARTHUR ADCOCK, Meldreth, Cambs v 91

PURE CAMBRIDGESHIRE HONEY, chiefly sainfoin, granulated, in ½cwt. tins, 60/- cwt., on rail; sample, 2d.; also 80lb. Beeswax, at 1s. 6d. per lb.—J. CUNNINGHAM, Stetchworth, near Newmarket, Cambs.

GOOD QUALITY LIGHT GRANULATED HONEY, about 5cwt., in 56lb. tins, price reasonable; quotation on application; sample, 2d.—H. BOLTE, Gedney, Holbeach, Lincolnshire. v 75

FOR SALE, W.B.C. Hive, one Taylor's No. 4. BELLAMY, Highfield House, Hoyland, Barnsley. v 90

FOR SALE, Twenty Stocks of Old English Blacks, on standard frames, plenty natural food, healthy, can be examined by your own expert; particulars.—EDWARD BAKER, Pickering, Yorks. v 85

FIRST GRADE CLOVER HONEY, lb. screw caps, 9s. dozen, packed, on rail.—BARNES, Clogger, Wigton, Cumberland. v 84

FINEST ENGLISH HONEY, 15s. per 28lb. tin; sample, 2d.—DUTTON, Terling, Essex. v 34

WANTED, W.B.C. INNER BROOD BOXES.—G. HALL, JUN., Borough, Hinckley, Leicester. v 91

"BRITISH BEE JOURNALS," July, 1909—Dec., 1912; what offers? will exchange for Cheshire's "Bees and Beekeeping," Vol. II.—TUNMER, Crown-lane, Maldon. v 78

LEE'S ALLIANCE, two Lee's Cottager's Hives, painted four coats, lift, super, excluder, nearly new, 4s. each; smoker, 1s.; clearer, 1s.; Lee's Cottager extractor, 10s.; 1cwt. ripener, with strainer, 8s., used once, as new.—LIMMER, 24, Eastwood-road, Goodmayes, Essex. v 76

FINE LIGHT-COLOURED HONEY, screw top jars, 9s. dozen; three consecutive years first prize winner.—REYNOLDS, beekeeper, Codsall. v88

Editorial, Notices, &c.

PROMINENT BEE-KEEPERS.

MISS M. DAGMAR SILLAR.

We believe this is the first occasion on which we have had the pleasure of presenting the portrait of a lady under the above heading, and the subject of our sketch is well worthy of a place among prominent bee-keepers. Miss M. Dagmar Sillar was born at Sydenham, London, of Scottish parentage and very early showed her love for natural history and all living creatures. We had great difficulty in getting from her a few details of her career, as her natural modesty inclines her to talk of anything but herself, but the few facts we extracted give one the impression that her life is one of strenuous and useful work. No one on reading the account of her career can fail to agree that there *are* women who are capable of occupying positions of responsibility and trust and of doing an immense amount of hard work.

MISS M. DAGMAR SILLAR.

To quote Miss Sillar's own words, she "has always loved bees in common with all other living things." She first kept them at her home in North Wales, when she had five stocks in "W.B.C." hives, but had to give them up on account of removal. In 1901 she became a student at Seaton Colonial Training College, and a year later went to the Lancashire County Council Farm at Hutton; while there she joined the Lancashire B.K.A. in order to extend her knowledge of bees. She found the bees at the farm were not taken much interest in, and obtained permission to look after them, which she did to the best of her ability. On leaving the farm after only a short stay, she took charge of an apiary belonging to a lady in Essex. While there she passed the third-class examination for the B.K.A. Experts' Certificate, travelling to Preston for the examination. The examiner (the late Mr. W. Broughton Carr), on being asked by Miss Sillar whether it was possible to learn bee-keeping *anywhere* in England, recommended her to go to Mr. W. Herrod, who was at that time expert to the B.B.K.A., and lecturer on bee-keeping, among other places, to the Swanley Horticultural College. In 1903, therefore, Miss Sillar became a pupil of Mr. Herrod's and worked under him at the college. On leaving Swanley, she went to Dunragit, and while there used to go round in the evenings after work, helping the cottage bee-keepers. She there made the acquaintance of the veteran bee-keeper, the late Mr. W. McNally, and used to often visit his apiary. From Dunragit she went to Kilmarnock to study dairying in 1904, and then to Messrs. Herrod and Stewart's apiary at Luton, where she passed the second-class experts' examination. In December, 1904, Miss Sillar

sailed for South Africa and joined the Scottish Settlers' Association, working bees and poultry there on half shares. She had taken out bee appliances with her from England, and also two queens, which travelled well to Cape Town. On the journey up country, however, most of the workers accompanying the queens died from the heat, and eventually, from their being too few left, the queens died also. As Miss Sillar says, she bought her experience dearly, and got "all the conceit knocked out of her" in her new environment; but, knowing "something" of bee-keeping, she was able to make the apiary a success.

She had some "W.B.C." hives (which she prefers to any other type) sent out from home. She was told that it was never cold in South Africa, that there was no frost, and that queens laid all winter, so she put bees on to full sheets of foundation in March, and had to keep them alive by putting hot bricks rolled up in flannel on top of the frames every night, and feeding the bees with warm syrup.

The bees and poultry were both doing well under her care when the Scottish Settlers' Association went into liquidation. This was in 1907; and Miss Sillar was asked by the Director of Agriculture of the Orange River State to accept an appointment as poultry and bee expert at the Government Experimental Farm at Grootvlei. The Government bought all the bees, &c., from the Settlers' Association. Her services were so much appreciated that she was in 1909 appointed expert to the S.A.B.K.A. for Orange River Colony. After the Union, Miss Sillar was appointed bee expert to the Union of South Africa, and continued to fill the position as poultry expert to the Orange River Colony. She had charge of the poultry, bees and dairy at the Government Experimental Farm at Bloemfontein, which was her headquarters, and if any farmer or bee-keeper wanted advice, and applied to the Department, Miss Sillar was sent to investigate and advise. She also frequently acted as judge of poultry and dairy produce at the agricultural shows held in the Colony, and gave demonstrations and lectures on bee-keeping at these shows, doing an immense amount of splendid propaganda work among the country people. As a recognised authority on bees Miss Sillar was appointed by the B.B.K.A., at the request of the Association in South Africa, to hold examinations for third-class Expert Certificates, the first being held at Johannesburg in 1911, and afterwards at the principal shows in the Union of South Africa. Unfortunately, she had a severe illness, and resigned her post with the Government in April, 1912, though she continued to examine suspected cases of disease in bees around Johannesburg, and answered questions for the Agricultural Department in the agricultural papers for some time longer.

South African bee-keeping owes a great deal to the energy and capability of this lady, and her fellow countrymen (and women also) no doubt will feel justly proud of her achievements. She endeared herself to the bee-keepers in South Africa, and when leaving the country they made her a life-member of the Association, and presented her with a token of their esteem in the form of a beautiful pendant, which she is seen wearing in the photograph.

Miss Sillar worked under General Christian de Wet, and General Louis Botha, while at the Government Farm. She lived alone in a bungalow made of corrugated iron and wood, and frequently worked from 6 a.m. to 10 p.m., not only doing all the practical work, but keeping the books and also all the records of all experiments made. This in itself was not a light task. When attending shows, she has several times had to travel all night, work at judging, lecturing, and examining candidates during the day, and travel home again the following night. In spite of all this she still says in a letter before us: "After all the hard work I wish I were going back to South Africa to-morrow." We hope, however, that she will remain in this country and continue her work for bee-keeping here.

Miss Sillar is well known to many bee-keepers, and in October last read a most interesting paper on South African bee-keeping at the British Bee-keepers' Association conversazione. She has also lectured recently before the Women's Agricultural and Horticultural Union in London.

BRITISH BEE-KEEPERS' ASSOCIATION.

(*Continued from page* 132.)

The monthly meeting of the council was held immediately after the annual meeting. Mr. T. W. Cowan presided, and there were present Miss M. D. Sillar, Messrs. W. F. Reid, T. Bevan, A. G. Pugh, E. Watson, J. B. Lamb, E. Walker, C. L. M. Eales, A. Richards, and J. Smallwood, Col. H. J. O. Walker, General Sir Stanley Edwardes; Association Representatives, G. J. Flashman (Barnet), G. R. Alden and G. S. Faunch (Essex), W. W. Falkner (Leicester), G. W. Judge (Crayford), G. Hayes (Notts), and the Secretary (Mr. Herrod).

Letters expressing regret at inability to attend were read from Miss Gayton, Sir Ernest Spencer, Dr. T. S. Elliot, Rev. G. E. H. Pratt, Captain F. Sitwell, Mr. O. R. Frankenstein, and Mr. C. L. Pinker.

The minutes of council meeting held February 20th, were read and confirmed.

The following officers were elected:—Chairman, Mr. T. W. Cowan; Vice-Chair-

man, Mr. W. F. Reid; Finance Committee, Sir Ernest Spencer, Messrs. E. Walker, R. H. Attenborough, T. Bevan, C. L. M. Eales, J. B. Lamb, J. Smallwood, and A. Richards; Exhibition Committee, Miss M. D. Sillar, Messrs. T. Bevan, E. Walker, C. R. Frankenstein, A. G. Pugh, E. Watson, and Captain Sitwell; Publications Committee, Messrs. T. Bevan, C. L. M. Eales, J. B. Lamb, W. F. Reid, and J. Smallwood; Emergency Committee, Sir Ernest Spencer, Messrs. W. F. Reid, and J. B. Lamb.

The financial report was presented by Mr. Smallwood. It was resolved that payments be made amounting to £40 17s. 3d. The receipts for the month of February were £13 15s. 1d. The bank balance at the end of February was £136 1s. 4d.

The dates of council meetings for 1913 were arranged for the third Thursday in each month excepting August, when there will not be a meeting, in July, when the meeting will be held at the Royal Show, Bristol, on July 3rd; and in October, when it will be held on the 23rd (Thursday) in Dairy Show week.

A letter was read from the Secretary of the British Dairy Farmers' Association, asking for a grant towards the prize fund. It was resolved that a grant of £5 be made.

Applications were received from the Barnet and Croydon Associations for Third Class examinations, and these were granted.

It was resolved that a Special Committee meeting be called, at 4 p.m., on April 10th to consider the report of the Special Committee with regard to the examinations.

Next ordinary council meeting, April 17th, at 23, Bedford Street, Strand.

THE CONVERSAZIONE.

At the conclusion of the annual meeting, over one hundred members and friends partook of light refreshments. The members of the council acted as stewards, so that everything was carried out more expeditiously than on previous occasions, and with greater comfort to the visitors. At 5.45, the lecture hall was crowded with members and friends, there being about two hundred present. Mr. T. W. Cowan presided, and called upon Mr. G. Flashman to read his paper on "The Natural History of the Honey Bee."

After introducing the subject of his paper in a few well-chosen words, in which he referred to the inadequate teaching of Natural History subjects in most of the schools in this country, Mr. Flashman said: The more we investigate the habits of the hive bee the more ready we are to uphold the high position which the bee holds in popular opinion; indeed, the careful observation of its rule of life brings out, in a new and unexpected manner, the astonishing assiduity of this small creature. We all admit that the division of labour is a most important element in all organised effort, whether among the operations of men or of animals. An object is more readily and effectually obtained, when the work is broken up into portions, and a limited and well defined task is assigned to each individual. The community of the hive in which we have queen, drones, and workers, each with their own peculiar duties to perform, fully illustrates this principle. One important respect in which the laws of labour are better exemplified in the operations of the bee than of any other insect community, with perhaps the exception of the ant, is the method which bees habitually employ with the object of saving time. That pattern of architectural excellence—the honeycomb—its shape and arrangement determined in accordance with the strictest principles of economy, being such as to hold the greatest amount of honey, with the least possible expenditure in wax, in a minimum of space. In the matter of time, bees are no less economical, for the systematic and businesslike manner in which they collect nectar is no less marvellous than the remarkable construction of their combs. In order to appreciate the importance of their methods, we must glance briefly at the task to which the little gatherers address themselves, and a few considerations will suffice to show that the undertaking is by no means a slight one.

The work of filling the comb with honey is attended with more difficulty than we might at first suppose, for the nectar has to be found, extracted, and transported, and one hardly knows which to admire most, the tact displayed in the search, or its methodical extraction when found. When a flower is first opened, it does not usually contain any nectar, in some cases several days elapse before the latter makes its appearance. It is only when the anthers begin to open, and the pollen is shed, or when the stigma is matured and capable of receiving pollen that the flower affords nectar, for it is only at these times that it is in a position to derive profit from the visits of insects. The secretion of nectar is largely dependent on the state of the atmosphere; it does not occur on cold, wet days, but in warm weather is copious. A large number of flowers are open only during certain hours of the day, some unfold their petals late, others close them up early, some open only at night, many close up their corollas if the sky becomes overcast. As soon as a flower has been fertilised, it begins to droop, and a re-absorption of the nectar by the plant takes place. This

proves that for any given species of plant the working hours of the bee are confined within certain defined limits. Within these prescribed limits as to time, since the quantity of nectar in each flower is very small, and the number of insects depending on this source of sustenance is very large, a considerable number of flowers will be early deprived of their sweets, thus largely increasing the difficulty of finding a supply of nectar. There are a few flowers, which, although provided with a nectar receptacle, and closely resembling nectar-producing flowers, never possess any, being so unscrupulous as to avail themselves of insect aid in fertilisation, without granting any recompense to their visitors for their services.

But the difficulties of bee-labour are not those of the explorer only, nor do they end with the discovery of nectar, for its extraction offers obstacles which, in some flowers, are so great that the bee cannot surmount them. Some flowers have their nectar-holders so deep that the bee's somewhat short proboscis cannot reach down to suck up the nectar.

The entrance to a great many flowers is blocked up, so that considerable force is required to open them—such as the snapdragon, which is only accessible to large insects. Probably the most serious difficulty in the process of collecting arises from the extremely minute quantity of nectar which each flower yields, and from its being dilute, in some cases so poor in saccharine that its sweetness is not appreciable to the tongue. The strength of the sweet fluid varies in different flowers, and even in the same flower at different times. Experiments have shown that each flower of the fuchsia contains little more than the tenth part of a grain; in monkshood the amount is appreciably less; in the everlasting pea each flower contains three-twentieths of a grain; in smaller flowers the quantity is proportionately less. One head of clover gave a little over one-tenth of a grain; now each head of clover contains about sixty distinct flower tubes, each of which, therefore have a portion of nectar not exceeding the one five-hundredth part of a grain. The proboscis of the bee must consequently be inserted into five hundred clover tubes before one grain of nectar can be obtained. There are seven thousand grains in a pound, so that for every pound procured in this way three million five hundred thousand flower tubes must be emptied. Honey, however, contains only three-fourths of its weight of dry sugar, so that every pound of honey is equivalent to more than two and a half millions of clover tubes sucked by bees. This shows what an amazing amount of labour they must perform. Industry would appear to be indispensable to their very existence. These amounts also reveal to what an extent the visitation of flowers must go on in the insect world, and help us to understand how it is that flowers are so dependent on insects for fertilization, so that we can well believe the forms of flowers to have been determined in reference to the insects frequenting them, and that the colours of the petals may serve to attract insects by way of advertisement, as coloured bills attract the eyes of busy men. The volume of nectar in a flower varies during the day. It is largest in the early morning and gradually diminishes till about two or three in the afternoon, when it reaches a minimum, and then begins to increase gradually towards the evening. The actual amount of nectar in the flower does not vary much, as the morning and evening nectars are poorer than the afternoon's, which appears to be more condensed.

The fact that bees are most active in the morning is well established. The numbers entering a hive per minute at different hours of the day have been observed, and it is found that the greatest number are abroad in the early morning, and fewest from noon onwards, whilst in the evening there is again an exodus from the hive. Laden bees returning to the hive have been weighed, and it is found that while a bee returning from work at 9 a.m. weighs 18.67 grains, one entering the hive at 1 p.m. only weighs 16.51 grains. If this difference is due merely to the early bee carrying an additional amount of water, this would indicate her inability to distinguish between weak and strong nectar. We must, therefore, look for some other explanation of the greater activity of the bees in early morning than simply the greater volume of nectar in flowers at that period, and the one which most readily suggests itself is that the number of previously visited and emptied flowers must greatly increase as the day advances, owing to the number of insects abroad. The time lost in fruitless visits would, consequently, be greatest in the afternoon. The fact that nectar is most copiously secreted by night may possibly confer an advantage on night flying insects. The tendency of the nectar to dry up during the hottest part of the day may account for the fact observed in Southern France that, during the hottest season, bees do not leave the hive at all, while in Algeria they go out to collect only during the early hours of morning, and not at all during the day. It cannot be truly said of the busy bee that it "gathers honey all the day," for its superior instinct teaches it to go only when there is a reasonable prospect of success. Bees have a most remarkable power of distinguishing between closely allied species of plants. They are expert botanists. The

colour of flowers is subject to great variations, but bees are not misled by these; they do occasionally depart from the rule of keeping to the same kind of flowers, but only very rarely.

(*To be continued.*)

BERKSHIRE B.K.A.

The Berks Bee-keepers' Association has prepared an interesting schedule, with reduced entry fees, for the show of honey, bees, and bee appliances, which will be held in connection with the Royal Counties' Show at Windsor in June next. There will also be demonstrations with bees. At a meeting on March 26th, at Reading, a resolution was passed urging the Government to re-introduce the Bee Diseases Bill into Parliament at the earliest possible date, as the prevalence of disease is making bee-keeping almost impossible.—*Communicated.*

B.B.K.A. LIBRARY.

Mr. Thos. W. Cowan has presented the following books to the Library:—"Guide to Successful Bee-Keeping," by John M. Hooker; "Lehrbuch der Bienenzucht," by Dathe and Reepen; "Foul Brood and its Treatment," by T. W. Cowan; "Bees and Fruit," published by A. T. Root; "Apistica," by Dr. Buttel-Reepen.

CHANCE FOR A BEE-KEEPER.

We have been asked by a firm of fruit-growers in Canada to assist them in obtaining an assistant, to take charge of bees in their orchard in Ontario, who would be capable of assisting with the picking, packing, and marketing of fruit while not actively engaged with bees. They describe the district as follows:

"We are situated here right in the heart of the fruit-growing district of the "Garden of Canada," on the shore of Lake Ontario, and in the most populous agricultural district of the Province of Ontario. Hitherto, we have refrained from going into bee-keeping, solely from the difficulty experienced in securing some young active man familiar with the work to take it up, either on his own account, or by joining forces with us. There are no apiaries, in the properly accepted sense of the word, in this entire district, and the chances of making an excellent living cannot be better. Honey in sufficient quantity is absolutely unprocurable. To-day the large stores in Toronto are selling honey gathered in California, on which customs duty has had to be paid, and carriage for 3,000 miles."

Any reader wishing for further particulars should send a stamped addressed envelope to W. Herrod, 23, Bedford Street, Strand.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

WASPS AND HUMBLE-BEES.

[8700] Next month, if not earlier, we may expect to see queen wasps enjoying the sunshine as they sit upon a leaf with their wings drooping at their sides—they have just come out from their long winter sleep. What a wonderful thing this partial suspension of animation is: six months of hybernating! After all, not a bad way of spending such a winter as the one we have had in this neighbourhood, wet and sunless, with severe frost only in December for one or two nights. I always feel a special interest in wasps; in fact, I may say I began bee-keeping with them. When a boy, I used to get an empty egg-shell, cut a small hole at the side, and fix a piece of wasp's comb inside it. As the young wasps hatched, I was delighted to see them going in and out of their miniature hive. The hatching of the egg, and the whole economy of the wasps' nest seems to be carried on at a very much lower temperature than that which is necessary for brood-rearing in a beehive. To me, wasps are interesting little creatures. Out of the seven different species of the social wasps that we have in Great Britain (and this includes the hornet), there are only three that are injurious to bees. The hornet, which I have known well in the south, but never seen in Scotland, will catch a bee on the wing as a hawk catches a bird, cut off its legs and wings in a moment, and fly off with the body to its nest. Then again, *Vespa Germanica* is a large and powerful wasp, and a serious enemy to bees when abundant. *Vespa vulgaris* annoys our bees, but is too small to do them much harm, unless the hive is weak. The queens of both these species of wasps should be killed in the spring. When a boy, I have heard my father speak of a man (I think a schoolmaster), who used to say: "Whenever you see a boy, thrash him, if he does not deserve it at the time he soon will." Many people seem to me to act on much this principle with wasps, whenever they see a queen they go for it and kill it if they can, but why so? Why visit the faults of the one species upon another. The remaining four species are, I believe, quite harmless to our bees, as far as my own observation has gone. I

had a nest of *Vespa Britannica* on a gooseberry bush in my garden; being in the way, I cut off the branch and fixed it by my study window, where they continued to work. On the other side of the window I had a small observatory hive. The bees neither interfered with the wasps, nor the wasps with the bees. On giving the slightest shake to the bough on which this wasp suspends its nest a dozen or two will rush out and hover in the air round their nest looking for the offender. While destroying a great number of flies, these wasps are harmless to bees. Then again, there is *Vespa Sylvestris*, a wasp that lives almost entirely on honey. On taking off the lid of one of my hives I found a nest fixed in the roof. The nest of this species never attains to any great size, apparently. I turned the roof of the hive upside down, and yet the wasps went on working as though nothing had happened. One was adding to the paper covering of its nest. How they had got into the hive roof was a puzzle to me at first, afterwards I observed them going in and out freely through the cone escape. They seemed as much at home at this as my bees are when robbing in the autumn. You might have seen quite a happy family collected on the head of the giant hemlocks in my garden, consisting of flies, bees, and tree wasps; they seemed on most friendly terms with one another, but when *Vespa Britannica* came along hunting for flies these insects quickly made off.

Vespa Rufa is a vicious little wasp. I never see it in this part of the country, but know it well when living in Hampshire. I do not think that it ever interferes with bees nor attacks fruit.

With regard to *Vespa Arborea*, I am not acquainted with this species and its habits, but it is so rare that it would not be a danger to bees or fruit. As it is a true wasp, I expect its habits would be very similar to the other two species I have spoken of.

Whilst I have always felt a difficulty in proving parthenogenesis with bees, it can be easily done with wasps. Anybody who wishes to do so can satisfy themselves on the subject. The first time that the nest of a true wasp is found, remove it carefully from the bough on which it hangs, leaving as much of the outer covering as possible. Secure the queen, then allow the wasps in the nest to fly out, they will return to the old position and soon commence comb-building, and in a short time this comb will be found to contain larvæ. As there is only one queen to a nest, the eggs must be laid by the workers, and if done pretty early in the season no males will be flying. Much has been said about the bees' comb and the beauty of its formation. The comb constructed by a wasp is, I think, still more wonderful, when you consider the materials of which it is made. In the case of the tree wasp, it is built with the fibre gnawn off any piece of sound wood. With the ground wasp, it is built with decayed wood. In the former case, the outer covering of the nest is built in long strips, whereas, in the latter, the outer covering resembles small oyster shells laid together. Each species of wasp keeps to the same material, and the perfect cell that they build for the young brood out of these materials is a marvellous feat.

But the question will be asked: How can we know one wasp from another? I admit there is difficulty in this, for those who are not well acquainted with them. The queens that are found on the windows of our houses very generally belong to the tree wasps. The one species may be known by the distinct marking of its body, the alternate stripes being very dark and light. With the other tree wasp there is a dark orange spot on the upper part of the body. Whenever a wasps' nest is found in the ground, we may be almost certain it belongs to one of the two species I have already spoken of that are injurious both to bees and fruit. It is a great pity to destroy the tree wasps, as they are most useful in the destruction of insects.

There is a striking difference between the origin of a bee-hive and a wasps' nest. With the bees the queen is accompanied when she leaves her hive, by an enormous number of her subjects. These do all the work and tend and feed her carefully, and it is only when the waxen cradles are built that her motherly duties commence. Not so with the queen wasp. When she comes out after her long winter sleep she first has to choose a suitable place for her nest; then she begins to build it, first making a sort of platform, from the centre of which three or four cells are suspended by a little paper column. These are added to, and all the work is done by the one wasp. The building, the collecting of food for the young grubs, and the brooding over them at night, all devolves upon her until the first two or three eggs laid are developed into perfect insects; then she has willing helpers, that by and bye, as the nest increases, will take all the outside work off her shoulders.

Both with the hive bee and the wasp a cell is constructed for the egg, but not so with the humble bee; in its case the nest commences in a very different way. The queen humble bee that has survived the winter commences her nest in some mossy bank or hole, the materials that she uses at first are the mosses that surround her. In the little nest she forms of these she makes a kind of sack of coarse, brown wax. In this she places a quantity of pollen, and with it deposits a number of

eggs. When these eggs hatch the young grubs feed on the pollen, and as they feed they grow larger, until they split the covering of their cradle. More pollen is added by the mother bee, and she carefully seals up the rent in their cradle; but still they grow, and rend the cradle again. This process goes on until they attain their full growth. The grubs then crawl out, and each one spins a cocoon for itself. There is no regularity in the way these are placed. When the young humble bee has cut its way out at the upper end of its cocoon and has vacated its prison, the edge is strengthened with coarse wax. It then serves as a honey-pot, and in some species of humble bee I have found a very considerable quantity of honey laid up in this way. The cocoons from which the young bees have emerged are never used for the rearing of larvæ. Someone in the pages of "B.B.J." last year spoke of a single egg laid in the cell, but as far as my knowledge of the humble bee goes, I believe this is a mistake. There is no cell in the nest for the queen to lay an egg in until the first young bee has emerged; after this, as I have said, it is used for a honey-pot.—HUMBLE BEE, Allan Vale.

BLURTS FROM A SCRATCHY PEN.

[8701] *Another Old Bee-book.*—"A profitable instruction of the perfite ordering of bees with the marvellous nature, properte and gouvermente of them, by Thomas Hyll, Londoner—Imprinted at London, Anno 1579."

Here, behold! the head and final of the quaint old tome lying in front of me. A wonderful old relic. Its binding is of vellum, once white, but soiled by age, for of wear it seems to have none. The printing is old black-letter, reminding one of German type. He must have been a clever craftsman who handled that book; not a stitch has yielded, not a leaf is loose. There are several blank fly-leaves, and on one of them someone has taken the pains to tell us something of "Thomas Hyll," the compiler of this book. But even the writing is pale and faded away almost. Were it not that the penmanship is of the best, small, but very neat, every letter clear, it would not be distinguishable. The hand which wrote (long ago has the pen dropped from it) must have trimmed the grey goose quill to a fine point—fine and hard almost as the pens made from the pliant steel by Joseph Gillott, and this is what is written of Thomas Hyll: "He was a London author of various works on physiognomy and dreams, mysteries, an almanac, astronomy and arithmetic, besides the present work. He died in the beginning of the seventeenth century." What a compendium of useful knowledge he must have been. I wonder whether he added alchemy to his talents. It was unfortunate, however, that in those days a man who got out of the ruck, who knew more than his fellows of Nature's secrets, earned a reputation for intimacy with his Satanic Majesty, and for such, burning at the stake was the punishment which fitted the crime. When modern magicians perform their miracles we know we are being bamboozled. It is what we pay for, and we rather like it.

But I am wandering away from bees, bee-talk, and also from my book. We have advanced so much during the last 334 years that it would be vain to look for instruction from such an antiquated instructor. Its special interest to us is that perhaps it is the oldest book on bee-keeping, in English, that we have. I shall be glad to hear of any more ancient. The author himself, indeed, professes no knowledge of apiculture. Indeed, he commences the "Preface into the Instruction of Bees" by saying in his delicious orthography: "Although (gentle reader) I have not given thee anye labour of mine owne, but rather have collected the sayinges and writings of manye aunciente authours." It is, therefore, but a compilation of the old fairy tales of Aristotle, Columella, Virgil, and others, spiced with a little seasoning of his own. Therefore, as I say, we must not look to the "treatise" for bee wisdom.

"Gentle reader," forsooth, he very politely calls his readers. I presume they must have been so in those days, as he says it: I am not quite sure, but for charity's sake we will give them the benefit of the doubt. But now-a-days, Mr. Editor, do *you* find your readers "gentle"? I give you credit for ability in deleting personalities, those rough burrs which irritate without benefit. But when your correspondents get warm, say, on the "Bee Diseases Bill," or the right and wrong way to cure *microsporidiosis* are they so very "gentle"? And then there are those other little trifles which occur so frequently, such as county disagreements, "skeps or non-skeps" question—nice little footballs which each disputant kicks with all his vigour, as if it was a vital question, and on which they often lose their gentleness.

Seeing, then, that we are not likely to find increase of practical knowledge from the book of Thomas Hyll, shall we find interesting amusement in some of the curiosities of expression with which this volume abounds? And the very opening sentence is one of them. It is as follows, spelling carefully preserved: "Plinie nameth bees cleft beasts, because of the division or parting betweene of the head and the shoulders, and Aristotle nameth

thè (an abbreviation of them) plighted or ringed in that their bodies are divided with plights or rings." Is it not amusing the meaning he gives to "cleft," and also to "plighted." "Cleft" to me has always carried the idea of longitudinal division (I hope Mr. Crawshaw will not be too severe on me); as, for instance, the judgment of Solomon, who ordered the child to be cleft in twain, and oaks are said to be cleft in twain when lightning strikes them. I cannot imagine it to mean transversely as our insects are. We have also "plighted." We who have taken unto ourselves wives have some knowledge of what the word generally means. We have a vivid recollection of how one fatal morning we "plighted" our troth for better or worse, and in token thereof we gave a "ring." But Mr. Hyll uses the word synonymously. Seeing that the marriage service, as used in the ritual of the Church in England, was composed at about that era, it is rather an interesting object lesson as to how our present language has been built up.—J. SMALLWOOD.

(*To be continued.*)

Queries and Replies.

[8621] *Conveying Bees by Rail.*—I shall esteem it a favour if you will give your advice as to how best to convey a stock of bees by railway, say, next month. The combs are last year's, and in standard frames. (1) Is it best to give ventilation at top or bottom, and what space should be allowed for the bees to cluster? (2) Would it be a good plan to transfer the frames into special boxes for travelling? (3) What is the usual freight sending them thus?—SANAS.

REPLY.—(1) You must provide ventilation at both top and bottom. A full description of packing hives for transit is given in the "British Bee-keepers' Guide Book" (page 116). (2) Yes, that is the best way for bees to travel, they cost less, as the hives can be sent by goods train. If packed in the hives you pay the higher rate for bees on the hive as well. (3) You will obtain this information by applying at your nearest railway station.

[8622] *Bees and Neighbours.*—An occupier of one of a row of cottages, also tenant of an allotment garden near my apiary, is inclined to be disagreeable concerning the proximity of my bees to his dwelling and garden.

Last year I possessed five stocks, but have now nine, and he took occasion recently to say that my bees were a nuisance to himself and his fellow cottagers while at work in their gardens, and also that they came through the windows and annoyed them in their homes, and expressed a neighbourly wish that they might all catch "the disease" and die.

He has complained in previous seasons of being stung and of the continual "buzzing" round him of "hundreds" of bees and also boasted of the number of casualties in the ranks of his tormentors resulting from his latest battle with them.

This season, seeing that I continue to increase my stocks, he tells me that he and his neighbours (who have never complained to me personally) are going to take steps to compel me to move them. The nearest hive to the cottages is about forty yards distant.

I should be glad if you would answer through the columns of the "B.B.J." the following points—(1) Does the law compel bee-keepers to place their hives a certain distance from other people's dwellings—if so, how far? (2) If a complainant or one of his family is stung and the "kind answer" policy does not succeed in appeasing his wrath, can he by that fact prove that my bees are a public danger, and make me move them? I am a member of the local B.K.A., and am insured.—T. B., Leicester.

REPLY.—The onus of proving the bees are a nuisance lies with your neighbour, but we should say he would have great difficulty in doing so with regard to the cottages. In the case of the allotment garden, there is a difference, as they are very close to him and would no doubt be liable to attack anyone working on the other side of the hedge. There is no stipulated distance at which hives shall be placed from neighbours. We would advise you to avoid litigation if possible and to this end suggest that you move the bees at once to the west corner of your garden (shown in the plan sent), you will then avoid all risk and at the same time prove to your neighbour that you are anxious not to annoy him.

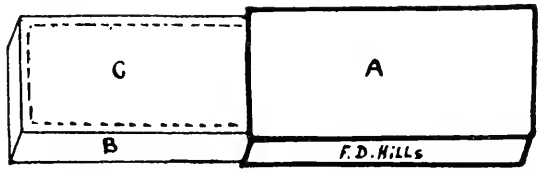
[8623] *Doubling Stocks.*—(1) With reference to page 61 of Guide Book, is it necessary when doubling as recommended in first method, to put excluder between the two sets of frames, and will there not be a danger of the hive swarming owing to the increased population; also please say at what time this operation is best performed, before honey flow, or when it is on?

(2) Would the following method be successful in stopping swarming and giving a good return of surplus honey? Select a strong stock and from it remove all combs containing brood, brushing the bees back into hive. Fill up brood nest with sheets of foundation or comb, and place the brood combs in another hive on top of body box, thus forming a second

storey. Of course, excluder would be placed between stories.—NOVICE, Kilmarnock.

REPLY.—(1) An excluder is placed between; if room in advance of requirements is given above, swarming will be checked. The operation is carried out at the end of May or beginning of June.

(2) Your suggestion is merely a repetition of above method.



[8624] *Early Queen-raising.*—Readers of your journal may be interested to hear that I found a sealed queen-cell (which I enclose) in one of my hives on March 31st. The colony has a fertile and prolific queen, and the combs are crowded with brood and eggs. The stock is a small one covering only about five combs out of seven or eight, as it was divided last year, and owing to the wet summer increased very little.

Can you explain the object of building a queen cell now? There are only enough bees to look after the brood, and there are two or more empty combs in the hive; so there is no lack of room, and the queen is a fertile one.

The season here is very early. On March 2nd I cleaned and moved some colonies to new hives and they are doing well.—E. M. P., Guernsey.

REPLY.—The stock was no doubt preparing for superseding the queen.

NOVELTIES FOR 1913.

THE "HILLS" QUEEN AND BEE CATCHER.

We have received from Mr. F. D. Hills, of Ivanhoe, Alton, Hants, a useful little appliance which he has designed. It consists of a small box of size and shape similar to an ordinary safety match-box, and it is used for catching and caging a queen or bees. Mr. Hills describes its use as follows:—

When in use, the box is pushed nearly out of its cover (A) the mouth placed over the queen and any workers that it is desired to secure, a slight movement up and down, with the cover end of the box will cause all bees underneath to get out of the way. The box should then be closed without raising it from the comb. By means of the Mica false bottom of the box (C) the bee-keeper can make sure of having secured the queen and necessary bees. If too many workers have been caught they can be easily let out one by one afterwards. To cage the bees, the appliance should be laid on the cage, with the mouth of the box toward the opening of the cage, the cover withdrawn, and by moving the lever of the false bottom, the bees are driven into the cage and can easily be secured.

"The catching of all the bees necessary can be done in one operation, and there is no need to handle the bees at all. Notes may be made on the cover if necessary, this is especially useful when more than one queen is being carried at the same time. I have used a similar catcher for years and find it very useful. The price is very low, being 3s. 6d. in metal, and in cheaper form only 1s."

TRADE CATALOGUES RECEIVED.

E. J. Burtt, Stroud Road, Gloucester.—This catalogue of 24 pages has been rearranged, and is now presented in a very neat and compact form. Those wishing to make their own hives are well catered for in the various kinds of hives sent out in the flat. We also notice Mr. Burtt is willing to quote for any size and quantity of planed and cut timber, a useful innovation to amateur carpenters. The "Adaptable Division-Board" is a very good idea. The catalogue is sent post free upon application.

WEATHER REPORT.

WESTBOURNE. SUSSEX.

March, 1913.

Rainfall, 3·19 in.	Minimum on grass, 22 on 18th.
Above average, 1·06 in.	Frosty nights, 5.
Heaviest fall, ·47 on 16th.	Mean maximum, 50·0.
Rain fell on 23 days.	Mean minimum, 38·1.
Sunshine, 114·0 hrs.	Mean temperature, 44·0.
Below aver., 30·1 hrs.	Above average, 2·2.
Brightest day, 15th, 8·9 hrs.	Maximum barometer, 30·554 on 9th.
Sunless days, 6.	Minimum barometer, 29·952 on 19th.
Maximum temperature, 55 on 30th.	
Minimum temperature, 29 on 18th.	

L. B. BIRKETT.

Notices to Correspondents.

F. A. W. (Borobridge).—*Mites in Queen-cells.*—The cells are infested with the pollen mite. Naphthaline would have helped to keep them away, but a better method is to dip the queen-cells in a 10 per cent. solution of formaldehyde, if you wish to preserve them as specimens.

H. T. (Eccles).—*Mead-making.*—(1) You should get a copy of "Mead and how to Make It," by the Rev. G. W. Bancks, price 2½d. post free, from this office. (2) The honey will ripen better if left on the hive till about the end of August, at that time it will not be granulated.

Beginner (Midhurst).—*Bees on Allotments.*—The location will be quite suitable for bees. Bees are kept on allotments in many places quite successfully. You can insure against damage to third parties done by the bees.

O. W. B. (Tanworth).—*Legislation and Bee-keepers.*—Legislation will not involve the appointment of a new set of paid officials. If this had been the case, the Bill would not have stood the ghost of a chance of being introduced into, to say nothing of passing the House of Commons, so there is nothing to fear in this respect.

W. H. B. (Brownhills).—*Suspected Queenlessness.*—Only an inspection of the combs will reveal whether the colony is queenless or not. The carrying in of pollen is not an infallible sign that there is a queen in the hive. If the stock should prove to be queenless, you can buy and introduce a queen now, as you will see from our advertisement columns.

Elgin (N.B.).—*Disinfecting Supers.*—(1) Fumigate the sections and racks with formaldehyde, and it will be safe to use them again. A still better plan would be to spray them thoroughly with a 10 per cent. solution of the formaldehyde. (2) You can effect a cure without trouble by using Herrod's Apicure.

Inquirer.—*Swarm-catchers.*—You have not complied with our rule regarding full name and address being sent with communications. The Brice Swarm-catcher is fully described on pages 22—23 of the "Bee-keepers' Guide Book." It can be obtained from Jas. Lee and Son.

Suspected Disease.

F. R. (Sowerby Bridge).—The bees have died from "Isle of Wight" disease.

T. M. G. (Renfrews).—The bees were too dry for us to say if disease caused their death, but from your letter we are inclined to think that they were chilled.

G. H. (Haddington).—There is no sign of disease about the bees sent.

A. G. C. (Bletchley).—There is no disease, the brown markings are caused by brood-rearing in the cells.

Newcastle Reader.—No. 1 was too dry for diagnosis; No. 2 died of "Isle of Wight" disease. As you cannot get a spirit lamp you can disinfect by painting the inside of the hive with petrol or paraffin, then light it and let the flames well scorch the wood, when it can then be put out by smothering with a wet sack.

A. B. C. (Devonshire).—(1) The cells contain foul brood. (2) Do not use the combs again, but burn them. (3) Yes. (4) The super combs, if new, can be disinfected with formaldehyde, but it would be safest to melt these down for wax.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.
Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

TWO HEALTHY STOCKS PURE ITALIANS for sale, with 1912 queens.—J. H. ANDERSON, 128, Castelnau, Barnes, S.W.

SALE, two honey ripeners (without strainers), 6s. 6d. each; twenty-four Commercial packages (with two 28lb. tins), 1s. 9d. each, six for 10s.; all Lee's make, unused, but soiled; 120 metal runners, 15in. long, 8d. per dozen; eighteen ditto, 15½in., 1s.; postage, 4d. dozen.—REV. W. E. MATTINSON, Horsey Vicarage, Great Yarmouth. v 100

LIGHT CLOVER HONEY, granulating in actual, 1lb. screw cap jars, 10s. dozen, and 14lb. tins, 10s. 6d., f.o.r.—WHEATCROFT, Ashby-de-la-Zouch. v 98

TO LET, bee, poultry, and fruit farm; particulars.—MIDLANDS, c/o "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 96

GRANULATED HONEY, 28lb. tins, 15s.; cwt., 52s.; sample, 2d.—G. MILLIS, Hills-lane, Ely. v 95

OWING TO DEATH.—Last of stock. W.B.C. shallow supers, with clean comb, 3s.; excluders, 5d.; "Porter" boards, 9d.; tin feeders, 9d.; 6½ dozen ends, 1s.; 7lb. weed foundation, 12s. 6d.; new 2cwt. machine, by Day and Millward, 20s.; honey tins, 28lb., 9d.; copper wax smelter, 3s. 6d.; new Brice swarm catcher, 2s. 6d.; stamp for reply.—LEECH, Newland Park, Hull. v 93

2CWT. FINEST CLOVER HONEY, £5 5s. the lot.—L. MEASURES, Tilbrook Grange, Kimbolton, Hunts. v 99

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

(*Continued from page* 145.)

It is of the greatest advantage to the flowers that a bee should, during any one journey, keep to one species exclusively, for if it were to go to all flowers indiscriminately much pollen would be deposited on the stigmas of plants of a species different from that to which the pollen belonged, and the flowers' chance of proper pollination lessened. But manifestly, this benefit to the plant will not account for the habit of the insect. Darwin said: "The cause lies probably in insects being thus enabled to work quicker; they have just learnt how to stand in the best position on the flower, and how far, and in what direction to insert their proboscides. They act on the same principle as does an artificer who has to make half-a-dozen engines, and who saves time by making consecutively each wheel and part for all of them." It is hard to explain how the bee should be able to fly in a straight line from one flower to the next of the same species. Colour and scent, no doubt, act as guides, but do not induce visitation unless nectar is at the same time secreted. In very many flowers the nectary is concealed. A bee cannot tell whether the nectar has been taken without first inserting its proboscis into the flower. How do they know which are, and which are not productive. Perhaps it is by the method of trial and error. That they do know what flowers are nectariferous on any given day is certain.

Flowers were watched for days by Darwin, without a bee coming near, but as soon as the secretion of the nectar began, crowds of busy workers suddenly appeared. You will not find bees among violets, clover, and heaths till the secretion begins.

Certain flowers which contain nectar, quite accessible to bees, are never visited. The sweets of the figwort and hellebore are reserved for wasps, and appear to be distasteful to bees. That they are capable of profiting by experience is proved by the well authenticated observation that a bee visiting a flower with several nectaries, if it find one empty, does not stay to examine the others, but immediately flies off to another flower, in this way effecting a considerable saving of time. Humblebees have a strong flight of ten miles an hour, and have been observed to enter at least twenty flowers a minute. There is striking proof that wild bees know the value of time quite as well as our friends of the hive—in the fact that they have a curious habit of boring holes in the corollas of flowers in order to get at the nectar more expeditiously than they could by entering the mouth of the flower. The nectar is removed in this way without any pollen being brought to the flower, yet, on a heath, it is often difficult to find a single bell which has not been perforated in this manner. It is doubtful whether the hive-bee can perforate a hole in the corolla of any flower. The general opinion is that it cannot, but it invariably prefers to make use of holes already made than enter the flower in the legitimate fashion. Great skill is exhibited in making these holes at the exact spot where the nectar is to be found. In some flowers the hole invariably is made on the left side of the flower because the opening to the nectary within the corolla is larger on the left side than on the right.

Does not this display the most accurate knowledge of the forms and positions of the parts of the flowers, and at the same time a capacity of employing that knowledge with advantage?

It appears to be chiefly when flowers are growing together in great numbers, that this mode of getting speedy access to the nectar is adopted. Another time-saving device which bees (and, to some extent, butterflies) employ is the act of always going to the lowest flower on the stalk in regular succession upwards. This order of visitation is of the highest importance to the plant because it ensures that the flowers of one spike shall be fertilized by the pollen brought from a totally distinct plant. Were this order reversed, the pollen of the upper flowers would simply be carried down and deposited on the stigmas of the older flowers below, owing to the fact that the stamens and stigma in each flower do not ripen at the same time.

The young flowers towards the upper part of the spike have only reached the first stage in which pollen is produced, whilst their stigmas are not yet capable of being pollinated. At the same time, the lower old flowers have shed all their pollen and their stigmas are in condition to receive pollen. A bee then, on entering the lower flowers, deposits there the pollen which it has brought on its body from a neighbouring spike, and when it leaves from the upper flowers it carries with it a plentiful supply of their pollen to deposit on the lower flowers of the spike next visited. The reversal of this order of visitation would completely frustrate the purposes for which the flowers are intended, since it has been shown that no advantage is gained by crossing flowers belonging to the same individual plant, that this is, in fact, a kind of self-fertilization, and involves all the sterility which this implies. In all this, however, the interests of the insect are not concerned, and we must seek some cause which affects its well-being. From what

has been already stated regarding the time when flowers produce nectar, it will be evident that many of the unopened, or but newly opened, young flowers at the top of the spike, will not have reached the nectar-producing stage; were a bee then to begin at the top flowers first, it must put off some considerable time examining these empty flowers. If there is any nectar to be had from the plant at all, the most likely place to find it will be in the lower and more advanced blooms. By going regularly upwards on reaching a flower which contains no nectar, the bee is made aware that there is no use trying any of the others higher up. In this way many fruitless visits are avoided, and the systematic door to door visitation of each flower, in order from below, is thus seen to be in keeping with the other economical instincts of these little workers. Who can help seeing that imitation of the time-saving habit of the bee would be of infinite use to human effort if applied to the interests of united labour? It proves clearly that to ensure success, the business of life can best be carried on by united effort to economise time, a strict devotion to duty, and bold determination to seize every legitimate opportunity, and so to work, that at the close of every day we can be in a position to prove that time has been properly spent. I trust it will not prove tedious nor uninteresting if we give our attention for a few minutes to some of the solitary bees—the masons, miners, carpenters, upholsterers, and rose-leaf cutters. I have often watched a mason bee digging into a wall, removing each time a particle as small as the proverbial mustard seed, taking infinite pains never to drop a piece on the ground at the foot of the wall, most likely fearing the danger of attracting the most undesirable attention of parasitic enemies. In about two days she digs an inch or more in depth, then she begins to line the hole with clay (which she fetches often from a very considerable distance), brought home between her legs. These interesting labourers have often been watched, and their quarry for building material discovered. At the quarry they do not mind being watched, they work away kneading and sticking together their load, but they show the greatest fear if watched at their nests. They will not go into them, and adopt several methods to prevent betraying the stronghold which is to protect their offspring. They will fly round and round in wide circuit, pitch at out-of-the-way places, and in other ways show a very strong maternal instinct in providing a secret refuge for their young. Upon a wall, or upon the stone dressings of buildings one can often see a knob of dry mud, as if thrown against it; when closely examined it is seen to be more stony than ordinary road mud, and there is a circular hole nearly in the middle. This is the entrance to the thimble-like nest of the mason bee, in which we find two or more cells, in each of which are deposited two eggs, and with the eggs a supply of pollen and honey for the grubs to feed upon. When the nest is finished, the eggs deposited, and the food for the grubs stored, the bee closes up the entry with a coat of clay, and her life business is ended. The carpenter bee never builds against a wall, but only in wood, hence its name. The nest is very like that of the mason in structure, and in provision for the young, and much precaution and often keener anxiety for safety is displayed. The upholsterer's nest is much more remarkable than that of either of the two mentioned. It is generally, probably always, a hole in the ground some 3in. deep, broadened as it deepens, shaped very like a flask. The interior is wonderfully smooth and highly polished, and lined with petals of the poppy, overlapped three, or sometimes four thick, each leaf edge overlapping with extraordinary regularity, forming a most beautiful diapered design. The builder is most careful to carry off every waste piece of poppy. During the construction she extends her tapestry beyond the entry to the nest, after the eggs are laid and all available space filled with pollen and honey: the extended tapestry is folded back over the aperture, and the top entirely covered with earth.

The rose-leaf cutter is an expert upholsterer. Boring a hole in a wall or in a hard path, it lines the boring with cuttings from rose-leaves, sometimes she uses mountain ash, each folded and affixed with mathematical precision to the cell walls. She builds several cells, which are thimble-shaped, and with the small end downwards, into which the cell above is fitted, all lined with leaf cuttings. About fifteen cuttings to each cell, and the same provision is made for the grubs as with the others.

A French naturalist tells us that his gardener once came to him in a great fright, imploring him to exorcise the evil spirit some magician had placed in his garden to damage his beloved roses. All rose growers are familiar with the circles which so often appear upon the edges of rose leaves. Not many, perhaps, have observed our little friend at her work. The mathematical exactness of the cutting is astonishing. No compasses, however skilfully guided, could describe a more perfect circle. It is most interesting to watch this bee cutting away the lining for her nest: she balances her body with the edge of the leaf between her legs, and by rapid motion cuts out the circle in a very short time, which she folds up and flies off with in some way attached to her legs.

All these small creatures exhibit marvellous industry and determined perseverance. Should the nest be damaged, or the work be interrupted she at once begins to restore it. Here is an object-lesson not to be despised: disappointment, loss of time, absolute ruin, apparently does not set up ill-temper or despairing idleness, not even discouragement as men understand it, and it is plainly suggested that we should work cheerfully, willingly, and thankfully, with determination not to be surpassed in quality, or to be less easily disheartened than are these little creatures when engaged in the work which the Creator has appointed them to accomplish.

It is remarkable that all the work of the "solitary" bees is done by the mother bee; the male takes no part. There are no neuters or workers, as with the hive-bee.

In admiring the marvellous skill displayed in the works of the "solitary" bee, we are bound to admit that they are not in any degree worthy of comparison with those of the hive bee, which for ages has commanded the interest and admiration of mankind.

The wonders of social economy, calling into play most remarkable, almost inexplicable instinct, if not the higher power of reason. Before the introduction of the sugar-cane this storer of saccharine substances supplied an unique want, and for centuries was associated with man by a bond of necessity, as strong as that which linked our forefathers to the cow, the sheep, or the horse, and though to-day we are less dependent upon her industry, her sweet product, and tuneful hum, are as grateful as ever.

Scientific investigation has proved this little worker to be a prodigy of wonders, of which people of a hundred years ago had no conception; indeed, no suspicion. As the wonders were gradually revealed, interest became intensified, minds were delighted and the desire for information vastly increased. The currency of the supposed facts was proved to be spurious, for scarcely a single assertion could stand the modern test.

The bee certainly was upheld as the best pattern of industry, patience and perseverance, and, perhaps deservedly so, yet we must acknowledge that she has a host of infirmities, of which such a writer as the great Dr. Watts had no suspicion.

At home, the bee is a thoroughgoing communist, but is certainly inconsistent abroad, for she is not strictly honest, and on slight provocation, gets gloriously drunk. Many live by petty larceny, committed individually on foreign hives; slyly dodging the sentinels, the robbers slip in, steal and gorge upon the neighbour's hoard. Small bands lie in wait for laden bees on their way home and plunder them like accomplished highwaymen. The sentinels are ever alert, offering their strongest resistance to the entry of marauders, often, when exasperated, chasing, and frequently killing, them. The ideas of the bee are very like those of our early law-givers, who regarded robbery as the greatest crime, and only expiable by death.

Departure from fable has created no void. It has proved that human imaginings are quite unequal to nature's resources, and that fact is really stranger than fiction. The bee has made for herself by far the largest place in literature, not even excepting the sluggard rebuking ant, in spite of, or perhaps because of, a vast number of time-honoured statements, not the outcome of study, but of crude, daring guessing, and careless observation.

Bee-keepers ought not to ignore the close relationship between apiculture, horticulture and agriculture. We cannot justly unacknowledge the marvellous aid rendered by the bee to both pursuits. Let anyone who is doubtful on this point visit, in a bad year for fruit, the localities where bees are most plentifully hived (say during the months August or September) and survey the country in a radius of two miles or so from an apiary. Inside this radius he will find the trees laden with heavy crops, and the rapidity of deterioration forces itself upon one more and more the farther one goes. Therefore, this can be no dreamy fallacy, but a convincing proof that the agriculturist, and the fruit farmer should duly recognise, and strongly encourage apiculture in relation to their special pursuits, and the closer the attention the greater will be their prosperity. It will secure larger returns of honey to the one, heavier harvests to the other.

(To be continued.)

SCOTTISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the council of the Scottish B.K.A. was held in St. Mary's Hall, Dumfries, on Saturday, March 29th, the principal business being the passing of the resolution calling on the Government to pass the Bee Diseases Act, a copy of the resolution to be sent to the President of the Board of Agriculture for Scotland, and to each of the Scottish M.P.s.

A public meeting, under the auspices of the Association, was held later, at which Mr. J. W. Moir, Chairman of the Association, presided.

The Chairman delivered a short address, emphasising the necessity of bee-keepers bestirring themselves to have immediate action taken to combat bee disease. He stated that the Bee Diseases Bill would probably be before Parliament shortly,

and every effort should be made to see that this Act was placed on the Statute Book now. Delay in this would probably mean death to the industry, besides having disastrous effects on agriculture and horticulture.

Mr. Moir hoped shortly to see an experimental apiary established in the Scottish Zoological Gardens in Edinburgh, and with the financial help which, it was expected, would be forthcoming from the Board of Agriculture, great things might yet be done for bee-keeping in Scotland.

Discussion having been invited, Major Wedderburn Maxwell, said he hoped that when the Bill was passed, it would be made a stringent rule that no inspector was to inspect one apiary and go on to another, until he had thoroughly disinfected himself. He was sure the disease had been spread through neglect of this precaution. Mr. H. Marrs, President of the South of Scotland B.K.A., took exception to this remark, and said it was quite possible for the disease to spring up in a hive, without being communicated from another hive at all. Mr. Michie, H.M. Inspector of Schools for Dumfriesshire, suggested that for the purpose of bringing the interests of bee-keepers before the public some pressure ought to be brought to bear on the Agricultural Committee, the County Educational Committee and, more particularly, on School Boards. At the present time, he said, School Boards had complete control of children up to the age of seventeen, and were giving technical education to engineers, artists, and others, and why not to bee-keepers? There was very little being done for agricultural education in Scotland, and he would impress upon them that if they were going to do anything for agricultural industries in Scotland now was the time, and it had got to come from local feeling.

A resolution on the lines suggested was unanimously adopted, and the meeting closed with a vote of thanks to the chairman.—A. Aikman Blair and J. L. Gibson, Joint Secretaries.

NORTH OF SCOTLAND B.K.A.

A meeting of this Association was held in Farraline Park School on April 5th, Mr. A. W. Fraser presiding. The secretary (Mr. Craik) submitted a draft of the constitution and rules of the Association, and these were adopted. It was agreed to invite landowners, county councillors, and other prominent men in the North to become patrons or honorary members of the Association. The secretary submitted a copy of the Prevention of Bee Diseases Bill, and on the motion of Mr. Scott, it was resolved to record regret that the Bill had been withdrawn last year, and to urge upon the President of the Board of Agriculture and Fisheries the necessity of re-introducing and passing the Bill at an early date. A vote of thanks to the chairman brought the meeting to a close.—*Communicated.*

SHEFFIELD AND DISTRICT B.K.A.

The above Society was inaugurated on March 10th, when about thirty bee-keepers were present. Another meeting was held at the Wentworth Café, Sheffield, on Thursday, April 10th, when the rules were passed and it was decided to join the Yorkshire Bee-keepers' Association as soon as there were sufficient members. Meetings will be held every second Thursday in the month.—W. B. Tallent, Secretary.

WARWICKSHIRE B.K.A.

At the annual meeting of the Warwickshire Bee-keepers' Association, held at the Grand Hotel, Birmingham, on April 3rd, it was proposed, seconded and resolved:—"That this annual meeting of the Warwickshire Bee-keepers' Association earnestly requests His Majesty's Government to re-introduce the Bee Diseases Bill withdrawn last session, and to pass the same into law with such modifications as may be necessary at an early date."—Y. N. Foster, Chairman.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of March, 1913, was £1,456.—From a return furnished to the British Bee Journal by the Statistical Office, H.M. Customs.

AMONG THE BEES.

By D. M. Macdonald, Banff.

WATER IN SPRING.

A large quantity of water is carried into the hives during spring and early summer, when breeding is being carried on actively, and where drinking sources are not easily available, it would be worth while to prepare artificial and easily-got-at fountains. It is estimated that at certain periods about 75 per cent. of the bees leaving the hive are bent on water-carrying, to thin down the thick honey in the cells to convert it into suitable food for the young being hatched. Some years ago I made experiments with fresh water and salt water, and the large proportion of bees showed a decided preference for the latter. Heated water, kept in a lukewarm condition, was more highly favoured than cold water. These two points deserve some consideration. It is a well-known feature that bees hunting for water in

spring display a fondness for saline water, and water at a higher temperature, near stable refuse. They collect it with an avidity seldom observed in common drinking sources. Undoubtedly, the taste must be assigned as a part of the cause. Try an experiment on this line to see if it is worth while. Stagnant water, too, becomes sour and rancid. A little salt placed in the reservoir will counteract that fault, and keep the water sweet and "fresh." Then bees get chilled and frequently die at the fountain, or on their way home. Taking the chill off the water by some means of heating it, and then running it off in such a way that the cold is carried away and only the lukewarm left for the carriers would be a vast saving of bee-life in spring. This *movement* seems to be an attraction to the bees in quest of water.

Spring Pollen.—Feeding artificial pollen in spring may work for good in three ways. It is more easily available and therefore more loads may be carried home, and this, by careful feeding, is done only on warm days and during the warm hours of the day. Bees have, therefore less labour to undergo in foraging far and wide, which means a conservation of energy, and thus a saving of bee-life. We are sure that what they carry home is sound and healthy food, and that therefore there is no injury done to the system of old or young bees by such unhealthy nitrogenous food as frosted pollen, which is frequently a very real evil during the variable temperature so common during the months of April and May. The open cup of the crocus is a favourite "feeder," wherein I place a small quantity of pollen, more on a fine sunny morning. An old skep redolent of wax and propolis serves the purpose admirably if placed in a sheltered, sunny corner of the garden. Place the food over straws or shavings, to form a foothold. A box so arranged that the bees load up under cover does better still, as they are thus less at the mercy of the weather, and they and the food are effectively protected from any sudden shower. There is also an inside feeder on the market, providing for a supply of nitrogenous and non-nitrogenous food at the same time. One division supplies artificial pollen without the necessity for the bees going outside for this indispensable spring food. As all this care is only necessary during some weeks of spring, and then only during inclement weather, the labour entailed is very slight, while at times the benefits are many.

Spring Packing.—Valuable as is winter packing, spring packing is more valuable still. During the period October to February, or later, the bees are in a close cluster, and are therefore able to keep up the necessary temperature without much, if any, effort, with little consumption of stores, and with a merely nominal waste of tissue. This explains why a colony poorly guarded comes out as well, or at times better, than one heavily protected. The first has a young queen, plenty of *young* bees, and a dry interior, therefore it survives even a severe winter, coming out in early spring wonderfully lively, in spite of other drawbacks. The case is different when *breeding* starts, because a temperature which suits a live bee, or rather a cluster of mature bees, will be far too low for living larvæ. Consequently, old hands are careful to inspect packing in March or early April, to see that it is dry, and that there is an ample supply; the knowing ones regularly even *add* to their winter packing at this period, recognising that active breeding is best and most successfully carried on with a high temperature in and all round the brood-nest. Novices should be advised to leave all winter packing on their hives until June is well established; just as the old proverb teaches them to be in no haste to shred their own winter garments: "Ne'er cast a clout, till May is out."

How are Stores?—Perhaps this paragraph may appeal only to Northerners, certain districts being already ahead of any need of warning. Last autumn, on account of the very poor honey-gathering season, showed more scant store cupboards than I think I ever remember at closing down time. All who did not then feed from 10lbs. to 20lbs. of syrup may have cause to repent it when active breeding starts, with its heavy drain on the sealed stores. Whenever mild weather allows a peep beneath the under-quilt, make certain that there is a reserve of stores in every hive. Early, well-made candy is the only form in which this can be safely supplied, but as soon as weather permits discard these emergency rations, and give fairly thick syrup, thinning it down as the season progresses. Every stock alive on the approach of our new growth of flowers is a valuable asset, more so than usual this year, on account of the depletion of stocks by disease. When a colony is found destitute of stores it is best to take drastic measures, even although they may be rather unorthodox. Take such a stock into a warm room, with the temperature so high that it will rouse up the bees from their lethargy, or torpidity, and give them a few pounds of warm syrup in a "Canadian" feeder. Then place them on their stand in the morning to have a good flight.

Swiss Bees.—Would anyone who has imported dark queens from Switzerland and given them a fair trial kindly detail their experiences to me personally, or through the pages of the JOURNAL?

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE SPIRACLES OF THE HONEY BEE.

[8702] Referring to my communications in "B.B.J.," January 9th and 30th, of this year, I have received an interesting letter from Mr. Snodgrass, together with the two sketches here reproduced.

At the time of my offer to readers of "B.B.J." of drones prepared for dissection, I sent him a few in hopes that he would be good enough to search out the second thoracic spiracle and describe a little more fully than he had done in his "Bulletin," *The Anatomy of the Honey Bee*, the position it occupies. He writes as follows:—

"After several unsuccessful attempts, I eventually found the second spiracle, just where I said I thought it was in a former letter. I enclose a sketch of it (Fig. 1) still attached to a piece of the upper end

Fig. 1

of the metapleurum, the plate, marked pl. 3, in my Bulletin Fig. 21. The adjoining sketch (Fig. 21) will show its position. It is very small, and hidden from sight in the natural condition, but between the two segments there is a fairly ample infolded membrane on the sides between Epm_2, Eps_2, and Pl_3. To get at it I cut the thorax into lateral halves with a pair of scissors, picked out the muscles from one half, put it in a dish of alcohol under a binocular dissecting microscope, and then pulled the plates apart along the meso-metathoracic groove. The spiracle lies just before and a little below the base of the hind wing and close to the front edge of the metapleurum. Zander's Fig. 95 showing its location is correct (*Der Bau der Biene*), though his details are not very enlightening."

To thoroughly understand Fig. 21, it should be compared with Fig. 21, page 54, *The Anatomy of the Honey Bee*, which shows the entire thorax of the worker, left side. The letters employed are the same in both figures. The dotted portion in the present sketch represents the extended membrane of the meso-metathoracic groove.

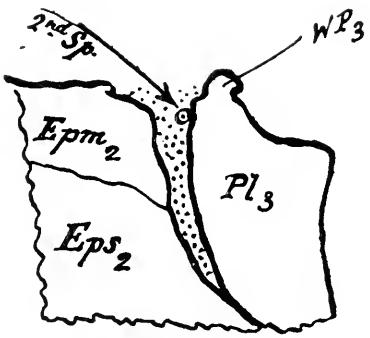


Fig. 21.

I am sorry that I cannot give the dimensions of the dissected spiracle, nor the magnifying power under which it was dissected. Obviously it was not a high one. Mr. Snodgrass has kindly sent me the dissected spiracle itself, and I hope to have it mounted and photographed, together with the other thoracic spiracles, for comparison.—H. J. O. WALKER, (Lieut.-Col.).

NOT ENTOMOLOGICAL BUT ETYMOLOGICAL.

[8703] During one of his pleasant perambulations amid old bee-literature, Mr. Smallwood (page 148) wanders from the field of apiculture into that of etymology—and here I feel impelled to break a lance with him.

He quotes from his author, Hyll, "Plinie nameth bees cleft beasts, because of the division or parting betweene of the head and the shoulders, and Aristotle nameth the plighted or ringed in that their bodies are divided with plights or rings," and asks is it not amusing, the meaning his author gives to "cleft," and also to "plighted." To Mr. Smallwood's mind the former always conveys the idea of longitudinal division; but, surely, this is not inherent in the word cleave. Many

quotations, did space allow, might be adduced to shew that the term means to part or divide by force without any implication as to the direction of the fission. I will content myself with one. Tennyson ("The Princess") speaks of "a spire of land that stands apart, cleft from the main." No notion of longitudinal division here.

Leaving "cleave" for "plight," Mr. Smallwood proceeds: "We have also 'plighted.' We who have taken unto ourselves wives have some knowledge of what the word generally means. We have a vivid recollection of how one fatal morning we 'plighted' our troth for better or worse, and in token thereof we gave a 'ring.'

Now plight is derived from AS. *plihtan*, to imperil, expose to danger, fr. AS. *pliht*, danger. And right here, as our American cousins would say, I must extend my sympathy to Mr. Smallwood, for it is evident from his text that he did not escape the danger to which he was exposed. And we may all express a pious hope that the assuaging flight of time may dim the vividness of his remembrance. But "plight" has no connection with "ring." Plite (or plight, as Hyll misspells it), is from L. *plico*, to fold, and has among other meanings that of an overhanging fold, in which sense it is here used by Hyll, and, to my mind used alternatively to, rather than synonymously with, ring.

The English language has certainly been built up in a most interesting manner, and the study of its evolution is one of the most fascinating and absorbing studies in which the human mind can become engrossed, but your interesting object-lesson, Mr. Smallwood, dissolves in the cold light of facts, "and like the baseless fabric of a vision leaves not a wrack behind." But take heart of grace! Though in parlous "plight" you are not necessarily "ringed" around with perils dire; and having had my thrust at you, I leave you to the tender mercies of Mr. Crawshaw.—C. Hanslope Bocock.

SENDING BEES BY RAIL.

[8704] I have seen the question asked several times lately in "B.B.J.," whether there is a special rate for *bees*, and the answer has been in the negative. Again, several correspondents have sent complaints of the excessive charges made for sending *bees* by *rail*.

I hope you will excuse me if I do not agree with your replies, as bees should go as live *stock* at *owner's risk* at *half rate*. I enclose one of the many *forms* I possess for your further information.—Thomas Hood.

[We are much obliged for the railway note, and all we can say is that you are fortunate in getting the railway people at your station to give you reduced rates on bees. We have tried to get this concession a number of times in the past twenty-five years without success, and we advise you not to say much about it, or you will find that different instructions will be given, and you will have to pay special rate. Our idea is that your good fortune is due to a mistake on the part of the officials at this particular station, as we have had the same thing happen in the case of comb honey. The general rule for carriage of this is that it will be carried only at owner's risk, although full rates are charged. Yet at times we have been able to get officials to accept comb honey at the company's risk.—Eds.]

MISLEADING REPORTS.

[8705] In the report of a County Association which appeared recently in the "B.B.J.," the expert stated that he had found no trace of "Isle of Wight" disease during his inspection. As, I believe, serious cases of the disease have been noted in the "B.B.J." from that county, is not this somewhat misleading? This is not the first report of the kind which I have met with. I do not wish to cast any reflection upon anyone. The real facts of the case appear to be that the disease does its deadly work so quickly, and leaves so few traces behind, that, when the expert pays his visit, there is no evidence to show the cause of death, and so it is not put down to its true source. Of course, the expert is not to blame. Perhaps even the hives have been removed by the bee-keeper.

Still, if the County Associations report little or no disease, when it is raging all the time, the Government is hardly likely to be impressed with the immediate need for legislation in the matter of bee-disease!

Attempts to Cure.—Most of these appear to include re-queening, but one of the most remarkable features of *microsporidiosis* is that the queen frequently is quite free from the complaint, though the workers are badly affected. It would be interesting to try giving the queen from an infected stock to healthy workers. I wanted to try the experiment myself recently, but could not get one for the purpose.—L. Illingworth, Essex.

WHAT WAS THE "FEVER"?

[8706] I have been taking walks around lately to see how the bees of the cottagers have come out of the winter. One nice old lady who promised me a swarm has only two stocks working in a little village of nine skeps. Starvation

appears to have been the enemy, and it does not seem to be all well now with one of the surviving colonies, but as the proprietress was unfortunately out, I must go again to look more closely on a finer day. At a small farm there are five hives, one or two with frames, and only one has bees in it, and I know of four or five places where hives, empty of bees, but too probably full of all manner of ungodliness, are standing as a menace to other bee-keepers. These ought to be all cleaned up by some sanitary inspector and their contents burnt. In one place there has not been a bee for at least two years, and the hives are actually falling to pieces where the last stocks died in them.

Last Sunday morning I visited a particular village quite off the main track. At the first house, where there were formerly bees, all are dead, and the hives have been put out of sight; a man from higher up the valley told me he has had three swarms come to him since he has lived there. He is without bees now. "I zee my hive ha' vell down," he said. "I must put'n up again and there'l zure to be zum more bees come into 'n."

At the next house the bees are all right and working bravely on the first buds of the sycamore. They are all in skeps, but I agree to give the owner a hive body and some frames in part payment for an early swarm. He has only three stocks now, and has kept as many as nine. "One year," he said, "I had more zwarms than I knew what to do wi', and I put two on 'em into one hive."

"A very good plan," I said, but I spoke too soon, for the man continued: "They took the faver and all my bees got it and it killed 'em all."

Now what was this fever that killed all my friend's bees two or three years before the "Isle of Wight" disease was heard of? The bees crawled out on the ground and gathered there in heaps, a fresh lot every day till they were all gone. The man was certain that overcrowding was the cause, whether of the two lots in one hive or of the nine lots in one small corner of the garden, or too many in one range of country. No doubt overcrowding helps the disease when dull weather and rotten pollen begin to undermine the constitution of the individuals. The last stock of bees I saw was in the stone-tiled roof of a farmhouse where it seems to have been located for a great many years. It has no close next-door neighbour, and no place for crawlers close underneath its "alighting-board." I have thought for a long time that if bees were perched up ten or twelve feet in the air and had no alighting-board, they would be freer from infectious disease than they are.—G. G. Desmond, Sheepscombe, Glos.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

An Unknown Sense (p. 107).—"Humble Bee" has taken me somewhat too conventionally in my use of the word "path." By this term I did not intend such a confined sense as that of footpath. I meant to include as path-marks any adjacent object, whether over, under, or beside. Thus the bush or tree *en route* and a portion of the house front would appear more important than the ash walk, particularly in view of the arrangement of the eyes of the bee. If "Humble Bee" will kindly accept this amplification, I think, perhaps, he may concede the point.

Wind-breaks (p. 112).—There is little doubt that the value of these is principally in the colder months of the year, as "D. M. M." points out. He does not, however, suggest the shrub he would use, which is both quick-growing and green during winter. Probably privet would be the likeliest, although objection has been taken to it on account of its honey, which is said to be poisonous. Not the least of its merits would be the ease with which swarms could be retrieved. Quickset hedges, holly, and the like, are objectionable from this point of view. A portion of my bees face a six-foot fence of wire. Convolvulus grows freely on this, making a mid-day shade in summer and a wind-break of dead stems in winter. The climber also compels the bees to fly over rather than through the wire.

Iteration (p. 113).—Some repetition is almost inevitable in a journal to which recruits come annually. These must, I presume, be catered for, but I agree with "D. M. M." that we too often see the same old arguments rise from their dishonoured graves to haunt us. Which of us has not been guilty? The case of disease legislation is, however, exceptional, and I am only too glad that space has been given so freely to both sides. The matter is so vital that all possible objections should be heard and, if possible, met fairly.

Quis custodiet? (p. 115).—The answer to this conundrum is clearly "Mr. Smallwood," and I am only grateful to him for his corrections. I fear there is truth in his accusation of criticism levelled at me. But it is very difficult to please everybody! Mr. Smallwood will, no doubt, remember the classical instance of the old man and his donkey. I find myself between the fires of those who object to seriousness and to a lack of it in this column. But I am inclined to think that Mr. Smallwood's further researches deliver him more completely into my hands. The "frame" he describes, which from his article I take to be similar to Rusden's, is more like a box

than a frame. Perhaps "crate" would describe it best. Three rows of horizontal sticks from the sides, and six from the roof. This is no more like a Langstroth frame than one of the old fixed bar supers. It is, in fact, a skeleton inner body-box. Body-box was a crude term used by me to indicate its position, and was not used by the correspondent to whom I am indebted. By the way, I quite fail to understand Mr. Smallwood's reference to him. He kindly sent me the description I needed, and of which I was only too glad to avail myself.

Heating the Imbedder (p. 117).—The makeshift device suggested by Mr. Heap is almost too crude. In any case, it would seem better to attach the candle to the end of the brick, so that the imbedder might lie in the hollow, and centralise itself. This makes for economy of time. But why attach the candle at all? A better arrangement is simply a wooden box having a V-shaped notch cut out of each side. There is always an objection to the candle flame playing upon the wheel. Soot is inevitable, and hot wax may drip into the flame. If the shank of the tool were copper, and rather heavier than usual, it could be heated with advantage. It is a help to use two imbedders if one is a quick worker.

Single-walled Hives (p. 118).—There should be no difficulty in tiering either shallow or full-depth supers with these hives, if all are of the same dimensions. Most American practice is of this description. An inverting lift will just as well cover the super as the hive body, if used in the inverted position. And a super-clearer (p. 127) can be used with Conqueror hives if it has a bee-way top and bottom. They are best made like this. If a Porter escape be used this bee-way allows of strips leading to it from the border, to guide the bees as they run around. Extra supers may be supported by packing them on strips placed on the one below.

Queries and Replies.

[8625] *Working for Surplus.*—I have two strong stocks, and am anxious to work for honey only this year. Should they swarm in spite of all I can do to prevent it, could I follow out the instructions given in the "Guide Book" (page 23), only putting the brood over a queen-excluder on the same hive after cutting out all queen-cells? Of course, the lower chamber would be fitted with frames and foundation, as advised. I am expecting both stocks to be very strong, and I am afraid that moving the brood from the swarming stock to the other might cause it to swarm also. I shall be glad if you will advise me through your valuable paper.—J. B. C., Plymouth.

Reply.—We would not recommend you to follow the plan suggested. Give room in advance of requirements, and ventilate the hive by blocking up the brood-chamber all round, about ½in. There will not be much risk of their swarming if you do this.

[8626] *Experts and Disease.*—(1) I should like to know if an expert can detect "Isle of Wight" disease when examining hives in autumn?

Late last autumn an expert came to me. My stocks were found well provisioned, were crowded into eight or nine frames and packed up. One, however, to even my inexperienced eyes did not seem up to the mark, three months later *all* were dead. The hives were new and clean, combs new, and plenty of sealed honey (I afterwards ran out about 15lb. from each hive). I promptly burned all frames, and extracted about 8lb. of wax. Would you advise me to try again? This is a good locality.

(2) When working for honey, it is advised to return any swarms which may issue. I am anxious to do this, how can I tell the hive the swarm issued from, if when returning home from work and find the swarm hived for me ready to pack up? —Beginner, Guildford.

Reply.—(1) Yes, if an experienced man. (2) If you wish to obtain honey, then you must return the swarm. To locate the hive from which it has issued, take a few bees from the swarm in a cup, dust them well with flour, and release them some distance away from where the swarm clustered. They will return to the parent colony and you will easily see the white bees.

Bee Shows to Come.

June 10 to 13, at Windsor.—Honey Show of the Berkshire Bee-Keepers' Association, in connection with the "Royal Counties" Show. Liberal prizes. Schedules from D. W. Bishop Ackerman, 161, King's-road, Reading. **Entries close May 14th.**

June 25, at Richmond, Surrey.—Honey Show, in connection with the Richmond Horticultural Society's Annual Flower Show, in the Old Deer Park, Richmond. Open classes for amateurs. Special prizes for Honey and Wax. Apply to W. Cook, Hon. Sec., Holmesley House, Sheen-road, Richmond.

July 1 to 5, at Doncaster.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

BEE-KEEPER FOR CANADA.

It appears that there are a large number of bee-keepers in England anxious to go to Canada. We are being inundated with hundreds of letters. As we obviously cannot write to all we are preparing a few questions to send out for applicants to answer. Upon receipt of these we shall despatch them to Canada and leave the choice and arrangements to the people over there.

Notices to Correspondents.

CUMBERLAND.—*Transferring to New Hive.*—(1) Bees locate position and not the actual hive; therefore, if you put the new hive in exactly the same position as that occupied by the old one there will be no danger of losing them. (2) Remove the old combs and replace them by frames fitted with full sheets of foundation. (3) This is one of the symptoms of "Isle of Wight" disease.

Suspected Disease.

JUVENIS CANIS, L. P. (Leytonstone), J. H. B. (Letchworth), CONSTANT READER (Sudbury), and J. P. (Whitley Bay).—The bees have died from "Isle of Wight" disease.

E. H. M. (Sydenham).—Destroy the stock at once, as the bees are affected with "Isle of Wight" disease.

E. H. W. (Bucks).—So far as we can see the bees have died from old age.

IN DOUBT (Cardiff), LYD (Gloucester), and B. B. (Heversley).—The bees have "Isle of Wight" disease.

WHARFEDALE (Bradford).—The bees were too dry for us to say if disease caused their death. The small insects are Braula Cocca or Blind Louse, a parasite which sometimes infests queen and workers.

E. J. B. (Chelmsford).—The bees have died of starvation.

T. S. (Barnet).—Destroy the stock at once, and burn all internal fittings, &c., of the hive, as the bees have "Isle of Wight" disease.

L. C. (Rotherham).—(1) Yes. See advice given to T. S. (Barnet) above.

H. C. B. F. (Berks).—The only safe course for you to take is to destroy by burning absolutely everything in the hives and disinfect the latter by scorching with a painter's spirit lamp.

N. C. C. (Cheshire).—The comb has both black and foul brood in it. You are fortunate, and have managed well to have kept your bees free of disease for so many years.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

EGGS.—Settings Rhode Island Reds, 6s.; Barron's White Wyandottes, Padman's White Leghorns, both 245 egg strain, 4s. 6d.; exchange bees or swarms later.—FLOWER, Morestead Rectory, Winchester. v 14

WANTED, up to 100, Swarms before 10th June. —No. XX., c/o "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 25

WANTED, twenty-five Stocks of Bees, in good bar-frame hives; carriage paid to Heytesbury; exchange Riley tricar, 4½ h.p., in good going order; also exchange good photographic outfit for bees.—SCHOOLMASTER, Heytesbury. v 15

THREE BEE-HIVES FOR SALE, excellent condition supers and section racks complete, healthy; particulars.—MISS DAKEYNE, Cheadle, Staffs. v 17

THREE single and three double Stock Hives, Cowan pattern, double walled, and clean, 5s. and 7s. 6d. respectively; also swarm catchers, 2s. each.—WILLSON, Beehives, Newhaw, Addlestone, Surrey. v 15

FOR SALE, three stocks of healthy Bees, on combs, 18s. each; packages free.—HANSON, 24 Triangle, Ilkeston. v 24

TWO STRONG STOCKS BEES, in good hives, ten frames, £1 each; two strong stocks, in W.B.C. body boxes, ten frames, 17s. each guaranteed healthy; put on rail.—T. Shipley, Polegate, Sussex. v 23

WANTED, two strong stocks Hybrid Carniolans or Italians, lowest price, prompt payment.—GRIMSHAW, Rawtenstall. v 21

EXCHANGE Hobbies' Suffolk fret machine (list price £4 4s.) for healthy bees on frames or swarms, or cash offer.—GRAHAM PARK, Newmilns, Ayrshire. v 19

BEES.—Two healthy stocks, shallow combs, £1 each, or best offer.—BALDWIN, Newton Park, Burton-on-Trent. v 18

A SPARE 1912 NATIVE QUEEN, 3s. 6d.—W. KING, 20, Moy-road, Cardiff. v 11

1 CWT. CLOVER HONEY, 54s.; sample, 2d., clear.—HOLIS, Pinehurst, Basildon, Essex. v 6

WANTED for breeding purposes, two pairs Goldfinches for out aviary.—Particulars to "British Bee Journal" Office, 23, Bedford-street, Strand, London, W.C.

TWO BEE HIVES, supers and bee appliances, 15s., or exchange poultry.—TATE, Throstle Nest, Horsforth. v 13

TWO pairs of wax foundation mills Super and Brood, £5 the pair.—PERRIN, 40 Dagnall-street, St. Albans, Herts. v 10

£8 8S. oak roll top Desk for sale, perfect condition, would accept £5 10s. cash, or bees in whole or part exchange.—MACE, Stow, Kimbolton. v 28

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at 23, Bedford Street, Strand, London, W.C., on Thursday, April 17th, 1913. Mr. T. W. Cowan presided for a portion of the time, and upon his leaving Mr. J. B. Lamb was voted to the chair. There were also present: Miss Gayton, Messrs E. Walker, J. N. Smallwood, R. H. Attenborough, O. R. Frankenstein, T. Bevan and E. Watson; Association representatives, G. R. Alder and G. S. Faunch (Essex), F. Ford and G. J. Flashman (Barnet), A. Willmott (Hertford and Ware), G. Bryden, and G. W. Judge (Crayford), C. H. Pinker (Crystal Palace), and the Secretary, W. Herrod.

Letters expressing regret at inability to attend were read from Capt. Sitwell, Messrs. A. G. Pugh, G. Hayes, C. L. M. Eales, and Sir Ernest Spencer.

The minutes of Council meeting, held March 27th, 1913, and of the Special meeting, held April 10th, 1913, were read and confirmed.

The following new members were elected:—Mrs. de Ascanio, Mrs. Faber, Miss M. N. Wyatt, Very Rev. Canon L. G. Vere, Mr. S. C. Spooner, Mr. R. S. Truscott, Mr. E. Purvis, Mr. J. H. Walmsley, Mr. A. E. Millward, Mr. L. Ropner, Mr. H. Hooper, Rev. F. S. F. Jannings, Mr. A. H. Austin, Mr. E. T. Fell, Mr. C. H. Cripps, Mr. B. V. Jogeswara Row, and Mr. G. N. Wyatt.

The St. Alban's and District Bee-keepers' Association applied for affiliation and were accepted.

The following nomination of representatives from affiliated associations were received and accepted:—(South African) Miss M. D. Sillar, (Leicester) Mr. W. W. Falkner, (Suffolk) Rev. D. Lloyd Jones, (Lincolnshire) Mr. D. Seamer, (Hertford, Ware and District) Mr. A. Willmott, (Mid-Kent) Mr. J. C. Roberts, (Lancashire) Mr. F. H. Taylor, (Northamptonshire) Mr. G. Mason, (Nottinghamshire) Mr. G. Hayes, (Cheviot and Tweed Borders) Mr. W. J. Sanderson.

The report of the Finance Committee was presented by Mr. Smallwood. The payments into the bank for March amounted to £26 18s., the balance at the bank at the end of the month of March being £122 2s. 1d. Payments amounting to £11 12s. 6d. were recommended.

Applications for third-class examinations were received from the Nottinghamshire and Gloucestershire Associations; the same were granted.

A letter was read from the British Dairy Farmers' Association, stating that the entry fees in the honey classes at the Dairy Show had been reduced to 2s. instead of 2s. 6d., as formerly. Mr. E. Walker was nominated as Judge at this year's Dairy Show.

Letters of thanks for lectures were read from the secretaries of the Glamorganshire, Cheviot and Tweed Borders, Lancashire, Northamptonshire, and Nottinghamshire Associations.

It was resolved "That the secretaries of Bee-keepers' Associations be requested to bring before their local secretaries the advantages to be derived from forming a register of bee-keepers, and that Mr. Herrod be requested to draft a suitable circular showing how this work can best be carried out."

Next Council meeting, May 15th, at 23, Bedford Street, Strand, London, W.C.

THE CONVERSAZIONE.

(*Continued from page* 153.)

The report of Mr. Cowan's lecture on "Bee-keeping in other Countries," which immediately followed the reading of Mr. Flashman's paper, will appear in our next issue. The lecture was one of the special ones in connection with the Development Grant, and was illustrated with over eighty beautiful lantern slides never previously shown. These were specially prepared by Mr. A. H. Cowan, many of them being beautifully coloured. We are reproducing several of these, and as we were not able to have the tone-blocks made in time for this issue, the report will be held over until next week.

WARWICKSHIRE B.K.A.

The annual meeting of the Warwickshire Bee-keepers' Association was held at Birmingham on April 3rd, the Rev. F. H. Gillingham presiding.

The thirty-third annual report stated that the honey season was not so good as the previous one of 1911. During the past year a large number of hives in Warwickshire had been practically denuded of bees, by what was known as the "Isle of Wight" disease, and although nothing definite had been ascertained as to its cure and prevention, it was hoped that shortly, by the help of scientists and the Board of Agriculture, the trouble would be overcome. During the year demonstrations had been given by the Association experts at Newbold-on-Avon, Meriden, Allesley, Ansley, Berkswell, Erdington, Fillongley, Marston Green, Kenilworth, and Alcester. The accounts showed that the income for the year amounted to £127 and the expenditure to £118. There was a balance on the year's working of £8 odd.

In moving the adoption of the report and accounts, the Chairman said that he

had come to appreciate what an intensely interesting occupation bee-keeping was. He wished every Cabinet Minister who organised, or tried to organise, the State, and every councillor who organised, or tried to organise, the city, could be made to study the bees. If this were so we should get saner legislation than we seemed to be getting at present. Then we should get real sanitation, real chastity, real morality, and real method. Then there would be work for everybody and short shrift for the man who would not do his work. He was given to understand that the last year had been a very trying one to those who kept bees, owing to the ravages caused by the disease known as the "Isle of Wight" disease. Some solution was bound to come, and that, he was told, very soon.

Mr. J. Burbidge seconded the proposition and the report was adopted.

The Earl of Craven was unanimously re-elected President. The acting committee were reappointed, with the addition of Messrs. Dennison, of Stockton, and Cleaver, of Leamington, with Mr. A. H. Foster as hon. treasurer, and Mr. J. Lawrence Hawker as hon. auditor. Mr. J. N. Bower was re-elected hon. secretary, Mr. J. R. Ingerthorpe assistant secretary, Mr. George Franklin expert, and Mr. Ed. Franklin assistant expert.

The following resolution was proposed by Mr. C. H. Saunders: "That this meeting of the Warwickshire Bee-keepers' Association earnestly requests His Majesty's Government to re-introduce the Bee Diseases Bill, withdrawn last session, and to pass the same into law, with such modification as may be necessary, at an early date." It was of the utmost importance that the re-introduction of the measure should be urged upon the President of the Board of Agriculture and other members of Parliament. Mr. A. H. Foster seconded and the motion was carried. It was stated that several members of Parliament had promised the Bill their support.

A lecture on "Diseases and Enemies of Bees," illustrated by lantern pictures, was given by Mr. W. Herrod, secretary of the British Bee-keepers' Association.—J. N. Bower, Hon. Sec.

GLASTONBURY AND STREET B.K.A.

The above branch Association held its annual meeting on April 12th, at the Bear Inn, Glastonbury. Mr. J. Harding presided, and there was a good attendance of members. The report of the expert and secretary were read, both showing the satisfactory condition of the Association. There was a credit balance of £2 0s. 6d. to hand over to the hon. secretary of the County Association.

After the meeting had passed a resolution supporting the Bee Diseases Bill, Mr. L. E. Snelgrove gave a most interesting address on "How to Get Surplus Honey in May and June." Votes of thanks were passed to the lecturer and chairman and the meeting terminated.—*Communicated.*

SOUTH STAFFS AND DISTRICT B.K.A.

The first meeting of the above Association was held in the Temperance Hall, Dudley, on April 19th, 1913, when a good number of bee-keepers were present. After considerable discussion as to the advisability of starting an Association, it was ultimately decided to do so, because it would fill a want long felt in the district.

The Chairman, Mr. E. H. Hopkins, remarked that although this district was known as the Black Country, he was surprised to find so large a number of bee-keepers residing in the immediate neighbourhood.

Viscount Cobham was elected President. Patrons and vice-presidents: Hon. J. C. Lyttleton, M.P., J.P., J. Silvers, Williams-Thomas, Esq., J.P. (Chairman of Education Committee), George Hatton, Esq., J.P., Edward Davis, Esq., J.P., (Whittington Hall), W. Neil-Collis, Esq., (Hampton Lodge), and G. H. Green, Esq.

Mr. Joseph Price kindly undertook the duties of secretary, and Mr. A. Rollins was appointed expert. The latter gentleman stated that he had a list of 200 bee-keepers residing within a ten-mile radius, very few of whom belong to any association.

Mr. C. R. Forse (Hon. Sec. Staffs B.K.A.) paid tribute to the very straightforward manner in which Mr. Price had carried out the arrangements, and Mr. Price, in reply, said that he hoped no friction would be caused by the formation of the new Association.—*Communicated.*

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

HOW TO MAKE AN EXTRACTOR.

The next appliance which our novice should attempt is the indispensable extractor, and as the method of making one described by Mr. Cowan in the pamphlet mentioned on page 103 cannot be improved upon, I obtained his consent to reprint this also. Mr. Cowan introduces the subject as follows:

"Although we do not think that it will generally pay an amateur to make an extractor for himself, yet there are those who like to make all their own appliances, and for these we give such details as may

enable anyone who understands working in tin to accomplish his object.

For this purpose we will select the simplest form of cylinder extractor, that known as "Cowan's Amateur," which has been the type for most of the extractors made since its introduction in 1875.

In our experiments on extractors, commencing in 1873, we made no less than thirteen different patterns, and by constant trial and alterations were able to decide on the best forms. Extractors were tried with four and six frames, but we found these as unsatisfactory as Mr. Root, who says in his "A B C of Bee-culture":—"Experiments have been made almost without number, and the general decision now seems to be in favour of a machine made entirely of metal, with everything stationary about it except what *must* be revolved. The momentum of heavy metal revolving cans, or of honey after it has left the comb, defeats the very object we have in view; and nothing will so effectually convince one of the difference as an actual trial of the two machines side by side. With the light all-metal machines the comb is revolved at the speed required almost instantly, and as soon as the honey is all

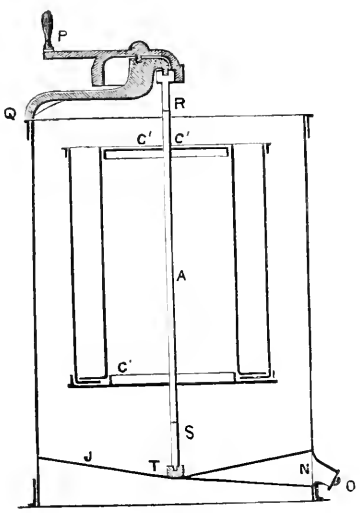


FIG 1

out of the comb the operator is aware of it, by the decrease in the weight as he holds the crank in his hand; but with the heavy, unwieldy machines the stopping and starting take more time than doing the work. The same objections apply to making machines for emptying four combs at once. They require to be made much larger, and are correspondingly heavy and unwieldy."

After trying extractors with revolving cans we found them so unsatisfactory that they were also given up. Experiment also enabled us to decide the distance the combs should be from the spindles; and this is of great importance, because if the combs are too near, as in some extractors we have seen, all the honey is not extracted; and although it may be convenient to have a can as small as possible in diameter, yet there is a limit to the minimum size for securing efficiency. In experimenting many

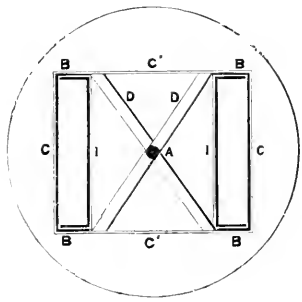


FIG 2

hundred combs were extracted and carefully weighed, the bees allowed to clean them, after which they were again weighed. The difference in the weights enabled us to determine the amount of loss in honey, and by this means we were enabled to arrive at the most suitable measurements.

Before proceeding we must here remark that no zinc or galvanised iron should on any account be used for extractors, or for any utensils for the reception of honey. The acid in the honey acts upon the zinc, and the oxide of zinc quickly poisons the honey. The same applies to galvanised iron, as the galvanising, as it is called, is only a coating of zinc. Nothing but tin or tinned iron should be used, and all iron parts coming in contact with honey should be tinned. We have always strongly insisted upon this, and have several times given our reasons for it in the BEE JOURNAL.

The illustrations, will, we hope, assist in better understanding the construction of one of these extractors.

As we have a standard frame we will give dimensions suitable for this frame, and anyone having another size will have to alter the proportions to suit it.

Fig. 1 gives a vertical section of the extractor, and Fig. 2 is a horizontal section through the comb baskets.

We will commence by making the spindle and frame. The spindle A is made by rolling up a piece of tin, and making a tube $\frac{5}{8}$in. in diameter. It will next be necessary to make the grooves

for the cages to slide in, and these will also form the uprights at the angles B. Cut four pieces of tin 15½in. long and 3¼in. wide, fold a seam along the two edges ¼in. wide, then turn these up at right angles ¼in., and we shall get a trough in section like this ⌊‾‾⌋. At one end cut the corner, and turn up the edge ½in. thus ⌊‾‾, as this will have to be placed to the bottom, and form the ledge for the comb baskets to rest upon.

The frame for keeping these together, C C C′ C′ (Fig. 2), being 12in. by 10in., we shall want strips of tin 1¾in. wide with a seam folded on one edge ¼in. wide and ⅛in. wire folded in the other edge. These strips must be bent at right angles, so that when they are soldered together they may form two square bands 12in. by 10in. Fig. 3 will show the arrangement of these at the top and bottom of the framework. The four uprights can now be soldered on to these bands. Place one of these with the wired edge down, and with a little solder tack the uprights in their proper position. It will be noticed, by referring to Fig. 2, that they have to be fixed to the long sides, C C, taking care that the piece turned up at the end of the slides is at the bottom.

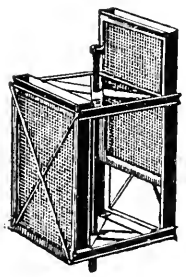


FIG. 3.

Now tack on the top band to the upper ends of these slides, with the wired edge uppermost. Be careful before finally soldering that everything is perfectly square, or the cages will not slide in properly. When it is found correct the whole framework can be laid down in a position most suitable for finally soldering all together. On the two narrow sides solder two brace wires diagonally from the opposite corners, as shown in Fig. 3 One will lie flat against the wire cage when it is in position and the other to complete the X will have to be bent where the two wires intersect, so as to make it also lie flat. If these wires be ⅛in. thick and are well soldered at the ends and at the place of intersection they will be amply strong enough to prevent any bulging, even with the heaviest combs in the baskets. For fixing the spindle to this frame we must make two pieces, D D, in the form of an X. These can be made of strips of tin 1⅝in. wide, with wire folded in the edges for strength, or, if the wire is not used, the tin should be a little wider and folded three times. They should be when finished not less than 1⅛in. wide. Fix them as shown in Fig. 2, and solder them where they cross. Then bore a ⅝in. hole in the centre of each, and push through the spindle, which must be firmly soldered in its place.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

"I.O.W." DISEASE AND DRUG TREATMENT.

[8707] The "I.O.W." disease made its first recorded appearance in this district in May, 1912. Since then fifty-three out of sixty local stocks have, to my personal knowledge, succumbed to it.

When I wrote to you last summer, it was to suggest that inbreeding might be a predisposing cause of the disease, and I cited my own stocks as examples of cross-breeding and vigorous health. With the premature close of the honey season last year, however, an outburst of robbing occurred: infected stores were brought in, and before a month was out, two of my best colonies were rotten with disease, and filling the garden with "crawlers."

They dwindled to such an extent that I ultimately cyanided them. As, however, all my neighbours' stocks were either infected or dead, I had no scruples about experimenting to attempt a cure.

A study of the Board of Agriculture's pamphlet led to the belief that any effectual destruction of *spores* about the hives, combs, and bees by disinfectants, must prove practically impossible. There remained the possibility of attacking the parasite in its less defensive stages, within the bee itself. This was tried in spite of the Board's adverse pronouncement on drug treatment.

"Crawlers" were collected in boxes with glass lids, and supplied with medicated syrups in bits of comb, kept warm and watched. "Controls" fed on honey were otherwise similarly treated and observed. Some died, some lived for weeks, some recovered power of flight. In all, seven drugs were employed, alone or in combina-

tions. That giving the best apparent results was taken for wholesale trial. It was added to the autumn syrup in bulk and served round as stores were needed.

With the destruction of the two colonies referred to, ten were left for wintering. *Signs of the disease were manifest with every one of these.* Five were almost without stores in September, three had the full complement of natural stores, and the other two some 14lbs. to 16lbs. of honey each.

They were all packed down with the necessary supplies for wintering.

The results up-to-date are as follows:—The three wintering on natural stores died down to such an extent, with concomitant dysentery and paralysis, that they have been put out of their misery; the two with half their stores medicated also went wrong: number one was burnt lock, stock, and barrel. With number two I had the curiosity to taste the stores, and found nothing present but pure honey—14lbs. in all. The remnant of bees in the hive were cyanided, the honey extracted, and frames, combs, and quilts burnt.

The remaining five colonies, wintering on medicated stores, with an occasional extra cake of medicated candy, are to-day strong, breeding vigorously, and promise to do well. From every hive, on fine days, occasional "crawlers" can be seen, but as medicated water is being freely taken from the drinking stands, I am hoping to carry them through the season with success.

The *facts* are that bees fed on natural stores succumbed, that those supplied with medicated and natural stores dwindled when the former were used up; those wintered on drugged syrup and candy have survived.

I am inclined to think that the developmen of the parasite within the bee is checked, if not prevented, by the presence of the drug in question in its daily food. I should therefore expect to find the disease re-appearing during the honey flow, when natural stores are superabundant.

Though all the hives in use have been completely disinfected, and the ground around the old stands dug and limed, it would seem impossible to escape re-infection, even if the present stocks were free from all disease. But if I can keep them alive and vigorous long enough there is just a chance that the stage where immunity comes into play will be reached.

I shall be pleased to report further on any results that may be obtained. H. W., Gravesend.

SEE TO THE STORES.

[8708] The chaos which accompanies a change of location has prevented me from writing much during the last few weeks, but I am taking the earliest opportunity of acknowledging Mr. Macdonald's intimation of closure. I would just say that it was not his silence at which I was aggrieved, but the covert thrust he dealt in his review column. Since he does not offer any suggestion as to how bees are to be procured when they are all wiped out, I conclude he has none to offer. It is the fashion just now in many walks of life to destroy, pull down and uproot without offering anything tangible in place of the demolished objects.

What a contrast to last season! On a fine day in February I went through my colonies and regarded them as amply stored. They were packed up for travelling soon after and arrived safely. Only to-day I have taken off the top coverings and to my horror discovered that nearly everything had been eaten. One strong colony had not an ounce of food left. When we consider that for six weeks bees have hardly been able to get out, and that when they went out there was nothing for them, it is not surprising. May swarms will be rare indeed, and one can only hope that the commencement of the honey-flow will be sufficiently delayed to enable colonies to build up in time for it.

Meantime, brother bee-keepers will be well advised to take no risks, but to keep the feeders going steadily.—Herbert Mace, Kimbolton.

POPULARISING HONEY.

[8709] It has been suggested that for the purpose of popularising honey we should have at our exhibition a tasting stall or at least some means of giving to the visitors just a *taste* of honey. I have been requested to enquire if those of your readers who have had any experience in this line—as I daresay some may have—will give us an outline of what they consider the best manner of doing this, and also what to avoid.—Geo. Hayes, Secretary, Notts B.K.A.

BLURTS FROM A SCRATCHY PEN.

ENTYMOLOGICAL NOT ENTOMOLOGICAL.

[8710] Now, had I known that my "Blurts" (for they pretend to be nothing more), written in spare moments when the humour occurs, would have drawn such a scholarly letter as that of Mr. Bocock, I would have ventured deeper; I would have given him something more worthy of him and of his valour. But as he has, in all knightly courtesie, struck my shield, I must even accept his challenge to a friendly joust, and look to my weapons.

And first we disagree as to "cleft." From several words of the same apparent

meaning, one may specialize a certain idea more than the others. "Cleft" is derived from the Anglo-Saxon word *cleophan*, to cleave, to split asunder; "as one cleaveth wood," is the expression of the Psalmist, and from this word we get "cliff," which means nothing else but an abrupt high rock (or similar matter). Tennyson's quotation, as given (157), is very vague, indeed, expresses nothing. But I have others more clear. Langford, in "Piers the Ploughman," describing the extreme moment of the Crucifixion, writes:

"The wal wagged and clef, and al the worlde greaved."

Shakespeare has two (of many) apt examples:

"Perjury cleft to the root" (*Two Gentlemen of Verona*).

And again:

"Cleave me to the girdle" (*Timon of Athens*).

I could cite instances *ad infinitum*, all tending to convey downward or division of the length as opposed to transverse or cross-fission. Even the very animal subject we are discussing is an object lesson of the mode of expressing the other kind of separation, for it is called an "insect" or "cut in" (three), we have also dissect both from the Latin *insecoare*, to cut in, make an incision. The difference is unmistakable.

Now for the other, "cleavage," and first let me thank Mr. Bocock for the expression of his sympathy, but I can assure him it has never been required. "He who loves the danger will perish in it." Need I explain more? But to return to our tournament, our next course is run on "plight" and "plighted." Why did you not delve just a little deeper, Mr. Bocock, into the origin of this Saxon word, and you would have disentangled the skein. *Plite* is from the strong Anglo-Saxon verb *pleon*, with the affix "t" and means danger; *plightan* is from the same root, and means to endanger, to promise under pain of forfeiture to pledge, and therefore the meaning of "I pledge thee my troth" is evident, although "forfeiture" is not apparent, but this latter idea is retained with us when the word is used in relation to the deposit of valuables. Langland has the expression:—

"Be my pouers, Pieres, I plight the my trouth" ("Bœtius VII.").

And Shakespeare:

"For sign of plighted troth" ("Henry VI.").

Sir Walter Scott writes:

"Before the sitting hour divide
The bridegroom from the plighted bride."

I hope I have made the meanings clear of *plite*, danger, *plightan*, to endanger and *plight* a pledge, through all of which the idea of peril runs, but when I come to plighted "folded," I must differ from Mr. Bocock as to the derivation. I take it to be from the French *plier*, to fold. I shall, of course, be told that this *plier* comes from the Latin *plico*, but I do not think so. It comes rather from the Latin *plecto*, to fold as a plait. The first verb has the meaning of folding on itself, as of a ring. Virgil has a line clearly expressing this:

Seque in sua membra plicantem (*anguem*),

of which a translation is:

And (the snake) coiling itself on its own limbs.

A snake obviously must be able to coil itself only in ring shape. I have several Latin quotations, all to the point, but I fear even now that fate in the shape of the Editor's scissors will cut some of those out, which I have already given. *Plico* and *plecto* are both akin to the Greek πλεκω, but differ in meaning somewhat.

Perhaps I should preferably have used the expression "curious," rather than "amused." With Virgil in my mind, as also other authorities, and Hyll using the word conjunctively with "ring," it seemed to me that it was in that sense that it was meant, and one of those interesting little details which occasionally reward the student.—J. Smallwood.

WASPS.

[8711] Having been much interested in "Humble Bee's" article in "B.B.J.," April 10th (page 145), about wasps, I thought the following might be of interest.

There are seven species of British social wasps, including the hornet (as your correspondent says). Three of these are tree wasps, distinguished by having the scape of the antennæ yellow in front in both the sexes. Three are ground wasps, in which the scape of the antennæ is yellow in front in the male only. The species are readily distinguished by the forms of the markings on the face, and on the dorsal aspect of the first two rings of the abdomen, as shown in the enclosed diagram.

In the case of hornets, the thorax is mostly black, and the forepart reddish in colour.—Walter Crosbie.

[We regret that the diagram was not sufficiently clear for reproduction.—Eds.]

NEED FOR A BEE INSPECTOR.

[8712] A friend having purchased an apiary of four hives, I assisted him to remove them to their new home. On the first favourable opportunity we examined the interior to discover if any damage had

been done in transit. Imagine my surprise at finding a wasp's nest about 5in. diameter lying on top of the quilt in the first hive examined. There were no contents alive. The nest originally had hung from the underside of the roof, as the paper attachments were still there. The quilt was quite damp, and an accumulation of refuse had formed directly under where the nest had hung, and various insects were there, probably feeding on this rubbish. The bees were few in number, with little stores, but had three patches of brood and a laying queen. There evidently is need of a bee inspector, when this can occur unknown to the owner. It is not surprising that he gave up bee-keeping.—JAS. K. GREIG, Dumfries.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Box Hives.—These homes of the bee are anathema in Australia and New Zealand, and consequently systematic attempts are being made to clear them out. Legislation in the last-named country is aiding this movement, the Apiary Act making such receptacles unlawful possessions. Mr. Hopkins believes that they are the great blot on the fair fame of apiculture, and Mr. Beuhne and a host of Australians curse them by bell, book, and candle. The most serious charge made against them is that they are hot-beds of disease and propagating centres for its dissemination and spread in neighbouring healthy apiaries. One high authority states, "As far as this State is concerned, where the box-hive has disappeared foul brood has either completely disappeared also or has became an insignificant factor." The straw skep in this country is the counterpart or duplicate of the box-hive, but perhaps the method of management practised does not make it so deadly a centre for spreading disease. Many of us, however, would not shed a tear although informed that these homes of the bees were to be legally suppressed.

Moving Bees.—Mr. Beuhne lately moved a large number of strong stocks a long distance successfully under adverse weather conditions, and assigns as the chief reasons for avoiding failure (1) the rejection of all combs likely to suffer damage from heat or jarring, (2) ample ventilation of the hives, (3) the addition of an extra story of dry combs over which the bees might spread, (4) a liberal supply of water during confinement, (5) tight packing of the hives in the truck, and, lastly, care in shunting operations. As many will be shifting hives very shortly, or later sending bees to the heather, hints may be obtained from the foregoing, which may prove beneficial when this trying operation is being carried out.

Sugar as a Food.—Scientists in America are discovering that used in excess, as it too often is, sugar is deleterious. Gleaning says, "The average person eats about three times as much cane sugar as he should. Many a factory girl and department store saleswoman makes her luncheon on starchy wheat-cakes swimming in maple, cane, or corn syrup. The unfortunate girls who work in candy-factories are not a healthy looking lot. Sugar injures all with bad stomachs and bad livers. But a great part of the sweets manufactured in this country are not even made of sugar. The editor puts in a good word for honey as a healthy sweet. "No scientific man will deny that honey, being an invert sugar, does not have the deleterious effect on the health that cane sugar does." The therapeutic value of honey is too little known and too seldom put before the public. "Honey is a medicinal curative agent, with bland healing, feeding, fattening, nerve-soothing deobstruent properties of the highest value in disease." Quite recently I observed an authentic statement that the Japanese soldier going on active service has a number of small tubes filled with honey, which he can enjoy even when marching, and it is contended that they considerably aid the powers of endurance. Now I read that German soldiers are supplied with tubes of honey while on the march, and if these be good for such an occasion they must be good for anyone engaged in laborious pursuits. The discovery is a very ancient one. Jonathan, in the wood of Ephraim, after a toilsome day of marching and fighting found himself refreshed on tasting some of the honey found in the wood as his victorious army passed through.

South African Honey.—On page 92 S.A.B. Journal, it is recorded that an attempt was or is to be made to make at least experimental shipments of honey to this country, but as the honey depot prices are as high as 1s. 6d. per lb., it is impossible to see where the profits are to come in, seeing that Jamaican honey of possibly the same type ("forest" honey) can be obtained in bulk at 3d. per lb. The *Standard* states that this honey has a flavour much the same as that known in this country as heather honey. I question the statement very much. The Journal has been passing through a period of strain and stress recently, which all will wish it may survive. Mr. Oettle, the late editor, has for some time been conducting a Poultry Magazine containing a page on Profitable Bee-keeping.

Bee-Keepers' Review.—One misses the

guiding hand, the facile pen, and the artistic illustrations, which formed such interesting and distinctive features of this bee-paper. Now that it is the official organ of the "National" it is conducted more on commercial lines and deals more extensively with Associated Association news, naturally not a deeply engrossing interest to us on this side. An obvious slip occurs on page 81, where the editor records that he sampled some honey from Hymettus, "a flower grown in Greece. A writer contends that we have been breeding bees too much for colour and in doing so have been neglecting several much more essential points. Beauty, while pleasant to admire, should yield to utility.

Snapshots.—All bees disappear at 65 degrees north latitude, except humble bees, so when bees are reported in Arctic regions they must be humble bees. The sooner one can introduce a new queen after the colony is queenless the better. It often happens when cells are started the bees seem to put their faith in the cells rather than in the valuable queen you desire to head them. It is almost impossible to break up the swarming fever once it is engendered, therefore one should be beforehand enough to be a little premature in putting on supers, enlarging entrances, and taking other means to check it

Honey shows radio-activity, and some kinds of honey show the presence of radium more than others, hence, perhaps, may arise the value of honey as a food and medicine. Various other constituents are important, including potassium, formic acid, chlorides, agotates, carbonates. Talking with some extensive Michigan beekeepers, I expressed my surprise that they did not clip their queen's wings, but they showed me in about two minutes that they could care for their bees during swarming time with less labour if the queen could fly than if the wings were clipped.

NOVELTIES FOR 1913.

HONEY JAR STAND.

Mr. R. R. Blackbourne, of Hoo, Ramsgate, has designed and patented an improved honey jar stand, which certainly is extremely attractive in appearance, and will, no doubt, prove a boon in those households where honey is habitually used. The illustration shows the article in use, and the inventor describes it as follows:—

My improved honey jar stand (patented) consists of a tray with uprights to form a handle, and a ring to keep the jar in its place. Upon the uprights a collar slides up and down, to which a hinged lid is attached, having an aperture therein for the reception of the usual spoon, the said aperture being adapted to be covered by a pivoted flap to prevent the ingress of insects, such as wasps and flies, when the spoon is not being used. The collar is mounted slidably on the uprights, in order that jars of different heights may be used, and to allow of placing the jar on the stand. The stand is made to take the standard 1lb.

STAND WITH LID OPEN.

and nominal 1lb. honey jar immediately the screw cap is removed. I consider that this stand fills a long-felt want, the usual method being for the jar to stand on the table with no cover (as the spoon prevents the cap being replaced while in use), the wasps and flies constituting a perfect plague at meal times.

The stand is made of electro-plate on nickel silver; price, 7s. 6d., post free 8s., and can be had from P. N. Russell, 2, The Parade, Minster, Ramsgate.

Queries and Replies.

[8627] *Preventing Swarming—Working for Heather Honey.*—I am now situate about four or five miles from heather and I am thinking of removing my small apiary within easy reach of this desirable source.

My difficulties are (1) swarming, (2) no heather press. The first I am advised to check by putting a shallow super under the body box with starters, and when drawn out place this above excluder. Now, I have no doubt this would prevent swarming to a certain degree, but would there not be a probability of taking the queen with the super?

The second is simply a matter of price, but would the honey be spoilt if heated till the wax melted and then allowed to cool when the wax would be taken off in cake.

I might mention that I should be able to average about two visits per week in summer to attend to things generally.

A reply through "B.B.J.," which I greatly appreciate, will oblige.—A NOVICE, Staffs.

REPLY.—Your best plan would be to keep the bees at home till August and then move them to the moors for the heather as practised in the North of Great Britain. At that time of year swarming is over. Combs obtained by working under the brood nest are dark in appearance and not at all nice, therefore we would not advocate this plan. By visiting the bees twice a week, you ought to be able to keep down swarming in the ordinary way. There is no need to buy a heather press if you work for sections. We cannot recommend the heating method as it would cause the heather honey to deteriorate considerably.

[8628] *Removing Candied Honey from Combs.*—(1) Can you tell me the best way to get candied honey out from the comb without a press, and in as simple a way as possible? (2) I have a stock of bees in one hive that come out when it is a sunny day and crawl about, and cannot get back to the hive again, and so die, but they are not queenless, and have plenty of stores. What is the best way to deal with them if diseased?—T. A. H., Harrow.

REPLY.—(1) You can only get the honey out by destruction of the combs. These should be cut out of the frames, put in an earthenware vessel, which is placed in the kitchen copper with water surrounding it. Heat until the wax melts and rises to the top. Allow it to cool, when the wax can be lifted off in a cake and the honey strained. (2) Your description points to "Isle of Wight" disease, in which case destruction of the stock affected is the best method of preventing its spreading to other stocks.

[8629] *Ventilating by Raising Brood-Chamber.*—In your reply to Query 8625 (page 159), you recommend blocking-up the brood-chamber all round about ½in., as a preventive of swarming. I have received the same advice from an eminent bee-expert as a precaution against "Isle of Wight" disease, and have two of my hives so arranged, but the following difficulty occurs to me. This raising of the body-box lifts the frames an inch from the floor-board, so how do the bees get on to the frames? It is evident they cannot reach them from the floor-board, and to go to the blocks at the four corners and get on to the frames from the walls of the hive would cause great crowding and waste of time in the busy season. "Isle of Wight" disease is raging here, and most of the bees are dead or dying. So far, I see no signs of it in my hives, but I fear I cannot expect escape. It is all very sad.—F. B. E., Lynton.

REPLY.—The cluster of bees reaches to the floor-board, so that no inconvenience is caused.

[8630] *Doubling Stocks.*—Would the doubling system, recommended on page 61 of "Guide Book," be successful if only one hive was utilised for this purpose, that is, to take out brood-combs and place them in hive on top as a second storey, the vacancies thus caused being filled with empty combs or foundation.—NOVICE, Kilmarnock.

REPLY.—No, that is not doubling at all, but putting a surplus chamber under the brood-chamber, called in the old days a nadir.

Bee Shows to Come.

June 10 to 13, at Windsor.—Honey Show of the Berkshire Bee-Keepers' Association, in connection with the "Royal Counties" Show. Liberal prizes. Schedules from D. W. Bishop Ackerman, 161, King's-road, Reading. **Entries close May 14th.**

June 25, at Richmond, Surrey.—Honey Show, in connection with the Richmond Horticultural Society's Annual Flower Show, in the Old Deer Park, Richmond. Open classes for amateurs. Special prizes for Honey and Wax. Apply to W. Cook, Hon. Sec., Holmesley House, Sheen-road, Richmond.

July 1 to 5, at Bristol.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

Notices to Correspondents.

MRS. C. WHITE (Hants).—*Medicating with Naphthol Beta.*—As Naphthol Beta is not solvent in water it can do no harm to the bees. You will find it has precipitated.

G. T. (Tonbridge).—*Bees and Neighbours.*—(1) We are sorry, but we cannot say what the opinion of your neighbours will be in the matter. (2) No, it is not too late; you can commence in May

with a swarm. (3) Write Mr. J. C. Roberts, 5, Tonbridge Road, Maidstone, Secretary of the Mid-Kent Bee-keepers' Association.

L. E. R. (Newcastle-on-Tyne).—*Fermented Honey in Combs.*—Treat the combs as you suggest, and it will be safe to use them.

G. E. F. (Stanwell).—*Candy.*—(1) The candy is much too hard for bee food. (2) The moisture is condensation from the bees, and is not detrimental in any way.

Beeman (Manchester).—*Bleaching Beeswax.*—In order to lighten the colour of your wax, to every gallon of water add 1½oz. of sulphuric acid. The wax should be first broken into small pieces and the mass must be constantly stirred, while melting, with a wooden stick. Full instructions for dealing with wax are given in "Waxcraft," by T. W. Cowan, price 2s. 2½d., from this office.

Suspected Disease.

W. J. K. (Tisbury).—It is not dysentery, but "Isle of Wight" disease.

C. B. (Rotherham).—(1) There is no sign of disease; the bees' stomachs were full of nectar or syrup. (2) It is quite possible that your disturbance caused the bees to "ball" the queen.

W. J. O. (Horsham).—(1) The bees have evidently died from "Isle of Wight" disease. (2) Much better burn the combs and honey. (3) See our advertisement columns.

A. S. G. (Bartlow) and Colonel Clements.—The bees are affected with "Isle of Wight" disease.

J. T. (Lockington), B. G. E. K. (Essex), H. S. W. (Wolverhampton), Destruction (Colchester), A. J. P. (Southgate), Beginner (Aberdovey), M. (Woodbridge), and X. (Stroud).—The bees have died of "Isle of Wight" disease.

F. J. (Bearsden).—From your description we should say the cause of death was "Isle of Wight" disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence. *Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.*

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

COMPLETE volumes of "Gleanings," unbound, for 1908 1909 and 1912, price 3s. 6d. each, post free.—MANAGER, "B.B.J." Office, 23, Bedford st, Strand W.C.

WANTED, strong stock of Carniolan Bees 1912 queen, or one or two strong stocks Italians, 1912 queens, guaranteed healthy.—CROWE, Central-avenue, Wigston, Leicester. v 30

FIVE HIVES BEES, Standard frames, 25/- each; one 14 by 14, 21/-; all guaranteed free from disease.—WILSON, Homesteads, Stirling. v 31

FOR SALE, a few choice 1912 Queens, English Blacks, guaranteed healthy, 4s. 6d. each, post free.—H. TURNBULL, 71, Commercial-street, Norton, Malton. v 29

GOOD OBSERVATORY HIVE, to hold three frames, two standard and one shallow, suitable for use at shows.—G. W. MARSON, Hagley-road, Stourbridge. v 32

FOR SALE, shallow frames and sections, convertible and rapid feeders, drone base foundation, metal runners and ends, American brads, all new, ripener, and other sundries, in good condition.—DRAKE, Chilbolton, Stockbridge. v 33

THREE SECTION RACKS, fitted foundation, never been used, 4s. each; copper wax smelter, 4s.—WARDEN Netherfield, Crowborough. v 37

SIX W.B.C. HIVES for sale, Solar extractor, 38lb. honey in bulk, and a quantity of appliances; list on application.—KEW, Grosvenor-terrace, Wantage. v 40

MICHIGAN WILLOW-HERB yields superb honey July till October, nine strong plants, 6d.; will few apiarists further test new I.O.W. cure; particulars; sample, 4d.—BOWEN, Coronation, Cheltenham. v 41

A FEW SURPLUS QUEENS FOR SALE, guaranteed 1912 bred, healthy and prolific, 6s. 6d. each.—ADAMS, Tilford, Heathhurst-road, Sanderstead. v 80

FOR SALE, 6 framed mahogany observatory hive, £4; geared extractor, 12s. 6d.; stocks of bees, on six frames, £1; swarms to order.—R. ALLEN, Tusmore, Bicester. v 42

WANTED, one or two stocks, guaranteed strong and healthy.—KEY, Godalming, Surrey.

FOUR new W.B.C. hives, 14s. 6d. each; two extractors 12s. 6d., 10s. 6d.; exchange for bees, honey, or wax.—BOWDEN, Broomhill, Witley, Surrey.

HIVES AND APPLIANCES for sale; exchange bees, or entertain partner.—NORFOLK, c/o "B.B.J." Office, 23, Bedford-street, Strand, London, W.C. v 46

TWO PENS, cockerel, four hens, White Wyandottes, Worcestershire Poultry Farm strain; exchange bees; particulars.—BOWDEN, Broomhill, Witley, Surrey. v 44

HIVES, secondhand, guaranteed never contained diseased bees, new frames in body boxes, 5s., 7s. 6d. each; clean, healthy, shallow combs, 4s. 3d. 5s. 3d. dozen.—ANDREWS, Rockroad, Millfield, Peterborough. v 39

EXCHANGE FOR BEES, prize glass case, 26 by 20, of fourteen very rare foreign birds.—DRAPER, 2, Yew Tree Villas, Park Gate, Swanwick, near Southampton. v 38

LIGHT WARWICKSHIRE HONEY, 28lb. tins, 15s.; sample, 2d.—HEMMING, York House, Henley-in-Arden. v 34

THREE STRONG STOCKS, in W.B.C. hives, (maker, Burgess), two new last year, open to expert inspection, five section racks box drawn out shallow combs, four excluders, forty-two metal dividers, eighty-five new sections, four drone traps £5 the lot, or divide, cash or deposit.—TRACEY, Willand, Devon. v 35

Editorial, Notices, &c.

BEE-KEEPING IN OTHER COUNTRIES.

Lecture by Thos. W. Cowan, F.L.S., F.G.S., &c., &c., given at the Conversazione of the British Bee-keepers' Association, March 27th, 1913.

Although honey was the original sweet used by mankind from the earliest days until the introduction of the sugar-cane, the science of bee-keeping really only dates from the last two centuries. Previous to this we know that many writers occupied themselves with the study of bees, but as they had no microscopes, nor understood chemistry, and employed fixed comb hives which were like a sealed book to them, it is not surprising that progress of the science was slow. We must not forget that Virgil in 30 B.C. completed the didactic poem on agriculture in four books, entitled the Georgics, the fourth book being entirely devoted to bees, and although it contains much with which, with our present knowledge, we cannot agree, will always be regarded as a classic.

The first three pictures which I now show you are from engravings published in 1680, the first and second representing the shepherd and his bees described by Virgil. The third represents the story of Aristeus, who lost all his bees and was comforted by his mother, who told him to slay four bullocks and nine days afterwards to offer sacrifice. What was his astonishment on arrival to find swarms of what he took for bees issuing from the dead carcases, but what we know must have been flies, which would be easily attracted to a decomposing carcase in such a climate.

It is therefore such men as Maraldi, Swammerdam, Reaumur, Schirach, Riem, Bonnet and Huber who must be looked upon as the pioneers of bee-keeping. It is not necessary to go into details of what these men have done, because I have to deal with bee-keeping of the present day, but we must not forget that we owe a great deal to their researches, more especially to those of Schirach and Huber. These made it possible for specialists who took up the business of bee-keeping to take advantage of their discoveries, with the result that we had such men as Dzierzon, Berlepsch and Langstroth, who laid the foundation of modern bee-keeping in what we call movable-comb hives. I shall now endeavour to give a brief account of the present methods in different countries, commencing with those of Europe.

FIG. 1. APIARY OF PROFESSOR HOMMEL, DURTOL.

One thing that strikes one is the large number and variety of frames in use. This has in a measure arisen from bee-keepers making their own hives, and it is only in recent years, since the organisation of societies, that any attempt has been made to obtain uniformity. The picture before you shows the principal sizes that are now used either as standards or those most largely employed. The next pictures show

the variety of hives. The German three-frame and the Swiss and French hives. Also the Grecian straw hive with bars, which is used to this day. There are also the Dadant and Layens hives.

We will commence with our nearest neighbour, and speak about bee-keeping in France.

FRANCE.

The progress of bee-keeping in France dates from the establishment in 1865 of the Société Economique d'Apiculture, which had for its secretary M. Hamet. At the same time the monthly journal, *L'Apiculteur*, was started, and was edited by M. Hamet until his death in 1889, when the editorship was entrusted to M. Sevalle, the secretary of the society, which had changed its name to Société Centrale d'Apiculture. M. Hamet was Professor of apiculture at the Luxembourg, but was a strenuous opponent of the frame hive, extractor and comb foundation, and attributed foul brood to the use of these articles. As a consequence, notwithstanding that other writers were advocating frame hives in this journal, it was not until after the death of M. Hamet that modern methods of bee-keeping were pushed to the front by M. Sevalle and his colleagues in *L'Apiculteur*. Although skeps still predominate, a large number of bee-keepers use frame hives. At the present time there are three standard frames in use which were adopted by the Congress of Bee Societies of France in 1891. These are :

The deep frame	40 x 30 centimeters	(15⅝ x 12¼in.)
Shallow frame	30 x 40 ,,	(12¼ x 15⅝in.)
Square frame	35 x 35 ,,	(13¾ x 13¾in.)

The hives to which these frames are adapted are the Layens, the Dadant, and Voirnot or metric, although the sizes of the frames are not of the original ones in these hives.

The Layens hive takes twenty frames, and is used for extracted honey, supers being rarely worked on it. M. Layens, who originated it, had in view the reduction of labour, the hive being only visited twice a year. It was so large that swarming was prevented, but there is a great inconvenience in handling such large frames, and except in very good seasons it is rarely that all the combs are utilised. The frames, being so deep, have to be kept in position at the bottom by wire racks. The next three pictures show apiaries of these belonging to Professor Hommel (Fig. 1), and the fourth shows one of these large hives on scales. The next is the apiary of M. Layens, with him manipulating one of the hives of which he was the originator.

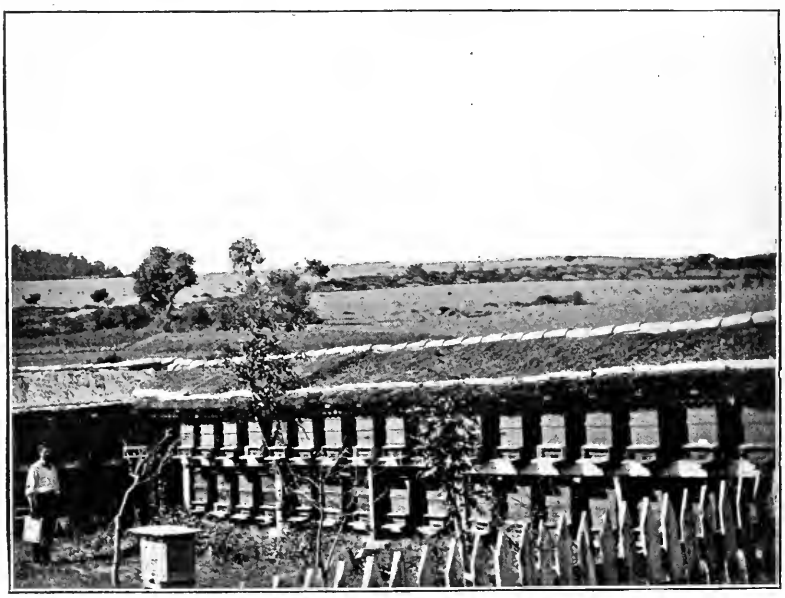


FIG. 2. APIARY AT MALMONT, FRANCE.

The hive more generally now used is a modification of the Dadant hive, containing ten frames, on which are worked shallow frame supers, the frames being the same length as those in stock hives, but just half the depth. The apiary of M. Papot shows these.

The Voirnot hive shown in the apiary in next picture is made to hold either ten, fifteen, or twenty frames (Fig. 2). The first

is enlarged by supering, the second has ten frames at right angles to entrance, and five frames at back parallel to it, with queen excluder between, so that the honey is stored at the back of brood nest. The hive, with twenty frames, is worked like the Layens. Besides these hives skeps are extensively used, and in the district of Gatinais a large quantity of very excellent honey is obtained by a system peculiar to that district. Here sainfoin is extensively grown, and there is no other pasturage, so that when the flowering is over the bees are either destroyed or taken to another district. The bee-keepers purchase bees in skeps in the spring, and a few days after the commencement of the flowering of the sainfoin the skep is turned upside down into a hole in the ground, so as to keep it steady, and an empty skep is placed on it. Generally a handful of straw is placed between the hives by way of excluder so as to prevent the bees from lengthening the combs upwards, and to induce them to work from the top. With fine weather the flow of nectar is so abundant that the super is quickly filled if the colony is a strong one. The sainfoin honey of Gatinais is famous, and fetches the highest price in Paris. Latterly some bee-keepers have adopted small boxes, which are worked as supers on the top of skep. The picture shows the way the honey is harvested.

Besides straw hives a large number of box hives are used, and these are generally narrow and tall (Fig. 3), as shown in the two pictures, the next one showing the method adopted of driving the bees out of these boxes to take the honey. In heather and buckwheat districts, of which there are such vast areas in Brittany and Landes, a large quantity of reddish-coloured honey is obtained, but this is principally used for manufacturing *pains d'épices*, a sort of gingerbread much used on the Continent.

Some of the best honey comes from Chamonix, at the foot of Mont Blanc. The honey is white, rich in saccharose, and exceedingly fine flavoured. In general, the Savoy honeys are of superior quality, and modern bee-keeping in this part of France has made great progress, which is due to its proximity to Switzerland, and the influence exercised by the *Revue Internationale d'Apiculture* published for so many years by M. Bertrand at Nyon, for

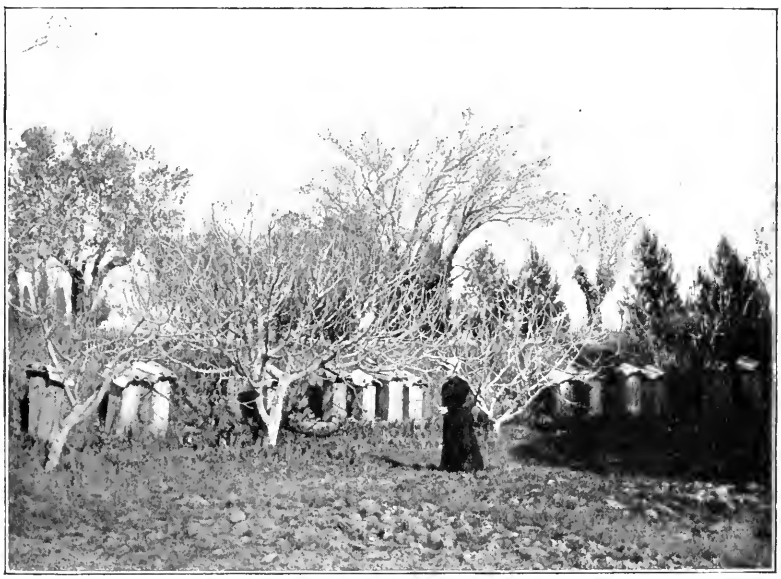


FIG. 3. APIARY OF MADAME MICHEL, PUY-DE-DÔME.

in Savoy we find the modified Dadant hive which he advocated mostly in use. When I visited the bee-keepers in Savoy with M. Bertrand I was much struck by the number of empty bee houses and sheds in the country, and was told that some years previously the bees had been cleared out by an epidemic of foul brood, and these apiaries had never been re-stocked. The bee-keepers of Savoy are quite advanced, and the picture before you represents a family of father and three sons, all farmers and keen bee-keepers. This and the next are interesting because they show both M. Bertrand and M. Layens among the bee-keepers.

The number of hives in France is said to be 1,623,278, the majority being in skeps, or four hives to every square mile,

and the value of the honey and wax produced at over nineteen million francs.

There are a number of Bee-keepers' Associations, some of them having their own journals, and educational work is carried on by the Central Association at the Luxembourg Gardens, where the model apiary you see before you has been in existence for many years. M. Sevalle gives courses of lectures, which are free to anyone wishing to attend. M. Hommel is also Professor of Apiculture in connection with the Regional College of Agriculture at Clermont, and there are several other professors at various colleges.

(*To be continued.*)

MR. RUNCIMAN AND THE BEE DISEASES BILL.

Mr. Runciman, President of the Board of Agriculture, speaking at a meeting at Pershore on Tuesday, April 22nd, at the Fruit-growers and Market Gardeners Association, mentioned the Bee Diseases Bill in the course of his speech.

After referring to the various departments of the Board of Agriculture, he spoke of the spread of the bee disease from the Isle of Wight, which was doing an incalculable amount of harm, not only to the bee industry, but to agriculture. In this connection he expressed the hope that Mr. Monsell would persuade some of his friends to allow him (the speaker) to get his Bee Diseases Bill through. Mr. Monsell and he worked together in connection with the difficulty arising out of the Kedwell-Flint decision. Mr. Monsell kept quiet the obstructionists on his side, whilst he (the speaker) tried to do the same with the obstructionists on his.

The President also, in conversation with a bee-keeper later, said that he hoped to get the second reading of the Bill through next week.

BERKS B.K.A.

ANNUAL MEETING.

The thirty-third annual meeting of the Berks Bee-keepers' Association was held at the Abbey Hall, Reading, on Wednesday evening, April 9th. Mr. F. B. Parfitt, J.P., presided, and there were present members from Reading, Windsor, Mapledurham, Langboro', Warfield, Wargrave, and Tilehurst.

The committee presented their report for 1912.

The balance-sheet indicated that the income, including balance brought forward and revenue fund, and £50 Berks County Council grant, amounted to £120, and the expenditure to over £80, including £57 for expert work, leaving a balance of £13 and a reserve fund of £26.

The Chairman, in moving the adoption of the report and balance-sheet, said the ravages of the so-called "Isle of Wight" disease were increasing, and it was found in districts hitherto unaffected. He had no bees left, and others were in the same position. The Bee Diseases Bill was receiving the support of the Association, but whether that would remedy matters it was impossible to say; they could only judge of its probable effects by making comparisons with what had been done in regard to other infectious diseases. At any rate, the disease was a serious thing for the country. A certain amount of knowledge had been obtained, but so far no effective remedies had been heard of. As to the Association's work, the membership had decreased in consequence of the deaths of stocks in various parts of the county. The Association's five experts had done a great deal of work. They visited 564 apiaries, containing 2,971 hives, and the knowledge they were able to impart and the instruction they were able to give must have been of considerable benefit to bee-keepers. He was glad to notice that demonstrations had been given with bees, for they were always an attraction at a show. To new members he would give a word of advice: Make yourselves acquainted with the literature of the subject. With a good knowledge of the theory the practical work would be easy. Lantern lectures were also a simple and effective way of disseminating a knowledge of bee-keeping. Lastly, they all endorsed the thanks of the Association to Messrs. Sutton and Sons for placing comfortable and convenient rooms at their disposal for meetings. With regard to the finances, he was glad to notice that the balance was on the right side.

Mr. H. Edwards seconded the motion, which was carried.

The committee for the Windsor district recorded a serious loss of members, mainly caused by the ravages of the "Isle of Wight" bee disease, which had resulted in the loss of many apiaries in the district. The committee had decided that the Windsor branch of the B.B.K.A. should be suspended for one year in consequence of the prevalence of the "Isle of Wight" disease. After several years of enthusiastic work on behalf of the branch, the hon. secretary, Mrs. W. S. Darby, had resigned her position, and the committee desired to record the indebtedness of all bee-keepers in the neighbourhood for the ready assistance she had always rendered.

The Chairman next proposed that this report and balance-sheet of the Windsor branch should be received, and referred in appreciative terms to the work Mrs. Darby had done. The proposal was adopted.

Princess Christian of Schleswig-Holstein was re-elected president, and the following were elected:—Vice-presidents, the Lady Wantage, Mrs. Noble, the Hon. Osbert W. Craven, Mr. T. E. Ellison, Mr. E. Gardner, M.P., Major Henderson, M.P., Mr. J. K. J. Hichens, Mr. C. E. Keyser, Mr. W. A. Mount, M.P., Sir H. Vansittart Neale, K.C.B., the Right Hon. G. W. Palmer, Mr. Alfred Palmer, Mr. E. A. Strauss, M.P., Mr. Martin J. Sutton, and Colonel V. B. Van de Weyer.

The members of the committee were re-elected, with the addition of Mrs. Jackson (Newbury), Mr. Whitbread (Warfield), Mr. G. Stimson and Mr. A. Dobell (East Hendred).

The experts, hon. secretary, and hon. auditor and representatives on the British Bee-keepers' Association Council were re-appointed.

Mr. H. Edwards stated that the Bill dealing with bee diseases in the last session was withdrawn, but it was reintroduced with some amendments the previous Friday. For his part he was willing to accept anything in the way of legislation that might be useful. He then moved that a resolution should be passed and sent, with a request to support it, to the Prime Minister, the President of the Board of Agriculture, and to all the members of Parliament for the county, saying that owing to the seriousness of the new malady affecting bees, which, in Berkshire, was making successful bee-keeping well-nigh impossible, the Berks Bee-keepers' Association urged upon the Government the necessity of pressing forward the Bill now before Parliament, so that it may become law at the earliest possible moment.

Mr. Stimson seconded the resolution, and after some discussion the motion was carried with two dissentients.—*Communicated.*

AMONG THE BEES.

By D. M. Macdonald, Banff.

BEES ON THE FARM.

Bee-keeping, owing to the bad repute of the old straw skep, has got an "ill name" amongst farmers. It has become a confirmed belief with most of them that bees require so much care and attention, especially during the busy summer and early autumn season, that they are, as one told me, more bother than good. While this may be true enough in regard to old-fashioned management, with its severe swarming, it is not the case when modern methods are adopted, whereby swarming is all but eliminated.

After the spring cleaning and getting everything freshened up when winter has departed, bees require little if any care, and practically no looking after during April and May. Surplus chambers may be prepared during any wet day in early June, and when the flow from white clover is due, with bees increasing rapidly, if a second body-box is added either above or below the first, thoughts of swarming will be effectively checked, and bees will work with a will without any necessity for watching to avoid the loss of swarms, because the bees have ample room.

As a rule swarming is generated by a congested condition of the brood area. The queen has no space to lay her eggs, the foragers have no cells wherein to deposit the newly gathered nectar, nurse bees have nothing to occupy them, and workers are so much in each other's way that the swarming fever sets in so strongly that nothing but a trek will satisfy the industrious creatures. Take steps timely, however, by giving them their hearts' desire, *i.e.*, labour incessant and sustained, and no thoughts of a breaking up of forces will enter their wise heads. This we do when we supply a second set of frames in the body of the hives, giving the queen ample room for ovipositing, because she has the run of the full twenty combs. Worker bees have also ample scope for their comb-building craze, and the foragers feel no congestion in the storing area. Over the best and most populous colonies a shallow body of eight wide spaced frames will provide this even in a good flow. In this way June and a good part of July is passed when field labours are very pressing, without any necessity for giving the bees more than an occasional passing glance. Till the end of the latter month white clover yields bountifully in an average season, and where limes bloom richly a further source of nectar carries them on well into August. The twenty frames in the brood body, with one or perhaps two shallow boxes above, will have occupied the bees' thoughts and taxed their best efforts without engendering any thoughts of swarming.

During July, however, the date depending on the lateness or earliness of the season, it is generally advisable to carry out the following plan. Re-arrange the two body-boxes so that all sealed brood is placed in the upper one; and all newly laid eggs, just hatched brood, and empty or honey filled combs in the lower one—placing queen-excluder zinc, above the lower body to confine her majesty to these ten frames, making certain that the queen is in the lower body. As the queen wants more laying space she will compel the bees to carry up all honey into the supers above to clear the cells for her ovipositing. The nearly ripe brood in the upper box will very quickly mature and add considerably to the population, while the empty cells will be utilised by the foragers as

storing vats. They may be thus used until the end of the season, and then extracted when the flow has ceased. In this way there has been no watching and really no labour right on until August, when as a rule the honey harvest is at an end. Extracting can then be carried out inside, on a day when farm field-work is impossible.

Instead, however, of leaving on the box of standard frames as advised above, the extra box may be carried away, the whole force of bees thrown into the one, and shallow bodies substituted as required. Two uses may be named to which the extra body-box may be assigned. It may be placed in a new hive on a new site, and so an additional colony may be formed if increase is desired, giving it either a ripe queen cell, a virgin queen, or a fertilised one if on hand. Or, alternating, the frames may be divided into two or three nuclei if still further increase is wanted. With care and nursing until winter approaches, or by adding frames of bees from other stocks at the end of the season, these small lots may be strengthened to stand the winter, and, with good queens heading them, to be powerful colonies the subsequent year.

By adopting this system of tiering up and giving plenty of room in brood body and surplus chambers, and then extracting at the end of the season *en bloc*, the important feature is that the busy farmer is under no obligation to do anything like looking closely after his bees during the whole summer and early autumn. Bees really look after themselves under his guiding hand, and they go on storing steadily right through the season as well as if they were being often meddled with. The golden rule is—Supply them with ample room below to keep them actively breeding, and with plenty of space above even in anticipation of actual requirements, to insure that there will be no congestion in the surplus chambers. The scheme is given only in outline, but an intelligent bee-keeper can fill it in for himself.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[8713] Shall I venture to say: Hail, smiling May—the month of swarming in the years of long ago? On looking up some old numbers, I find we had strong swarms before mid-May in the early 'eighties, but in recent years the swarms have not come off till June, and then were not of the strength of those a month earlier of thirty years ago. To go a decade further back to the late 'sixties, we had swarms from the now despised straw skep in sheltered positions as early as April 28th to 30th. This was when nearly every cottager in the neighbourhood kept bees, and when five to a dozen stocks with their straw hackles graced the farmers' gardens. In one or two of these gardens I knew when a boy, twenty-five stocks were always left to stand the winter. The cottagers used to winter five or seven as a rule, but some kept more for winter stock. In those days the farmers' seed fields were fertilized, and the fruit trees were laden with fruit, as the old folks said, "They hung like onion ropes." Now the country side is bereft of bees, the modern farmer (at least in this neighbourhood) does not trouble to keep them, the cottager, "like master, like man," follows suit, and has practically given up bee-keeping. We have one agricultural labourer only who keeps bees in Beedon, and it is much the same in the surrounding parishes. The frame-hive is out of their reach. How can a cottager on 11s. or 12s. per week invest in hives and other necessary appliances for modern bee-keeping? And what with the introduction and spread of bee diseases by misapplied modern methods, the minor industry of apiculture is in a parlous condition indeed in Wessex.

The foregoing remarks show the seamy side of the craft; let us try and find the reverse. I am thankful to be able to report all is well with the bees at my out and home apiaries, but the springtime has been most trying. Only by constant feeding have we kept them going, the weather has been so bad the bees have not been able to forage for the much needed nectar to start breeding in earnest. April 23rd and 24th were good days, and then we had the first outburst of enthusiastic bee work of 1913. I trust none of my readers have neglected their bees, but have fed constantly. I have thought of you many times, and hoped the weather was more sunny and genial in other parts than in my district. In May, if the weather is warm and sunny, the bees will take care of themselves, if they have plenty of forage, but never forget that with a growing brood-nest more food is required and a little help may, even in May, be needed to keep things in good trim, and fill the hive with bees ready to take advantage of the first honey-flow of the season.

The untoward weather of April has prevented spring-cleaning of hives. So far we have only had two days this month with fit weather for opening a hive for

examination. I have fed my bees in the open on every opportunity, and I believe that where this method can be practised it is the next best to an income from natural sources. Of course, where one is near a number of other folks' bees open air feeding cannot be followed, or in districts in which disease is rampant, no one would advise it, unless one could feed medicated food *pro bono publico*. When examining stocks, weed out the old pollen-clogged, or otherwise undesirable, combs. These can be replaced by new frames with full sheets of wired foundation, which must be inserted when the bees are busy and honey is coming in freely. Put one in the centre of brood-nest and give another in two or three days' time; see that the quilts and wraps are made secure after inserting the foundation.

Don't neglect to place your orders for bee goods until they are wanted; also thoroughly clean out and disinfect any hive you intend to put swarms into. Don't buy bees or swarms unless you know you can depend on the vendor not sending out bees from apiaries in which disease has shown itself (I am referring more particulary to "Isle of Wight" disease).—W. Woodley, Beedon, Newbury.

YORKSHIRE NOTES.

[8714] I was particularly pleased with Mr. Herrod's reference to "An Interesting Old Bee-Book," in your issue of April 3rd last. These extracts from quaint books and pamphlets are real tonics when read alongside our modern writers. Your reference to "The Cottager's Guide, 1832," at once brought down from my bookshelf "The Management of Bees," 1834, by Samuel Bagster, junr., which had occasioned much genuine amusement while reading up recently with a view to taking the first-class expert examination. Among many other quaint suggestions in this book, I was particularly amused with a description of Huish's hive, which description is absolutely eclipsed when Dr. Bevan, on page 112, severely criticises the possibility of Mr. Huish's invention for taking side-frames (superfluous stores, so-called) out of his skep hive. Mr. Bagster himself commenting on the operation says, "Anyone can eat the honey *after* it is taken from Mr. Huish's hive, but who will lift up the cap of a hive in working order and take out a comb or two covered with bees?" The hive referred to is something after the style of the Greek bee-hive.

Now you have whetted our appetites, please give us some further "dips" into quaint bee lore.

The review in same issue, *re* "A Practical Manual of School Gardening," should be brought to the notice of all rural school teachers: bees in a school garden are a real acquisition. H.M. Inspector was delighted last summer to see bees here, and after a chat midst the buzz of drone and worker he strongly recommended me to sit for the B.B.K.A. expert examination. I went through the third-class examination soon after at the Doncaster "Royal" Show, and the second in November last, and now look forward to the "finale." When my bees were on the moors in August, 1911, I made the acquaintance of a bee-keeper of some years' standing, and after the inevitable chat, I "drove" bees from an "imped" up skep, which stood about 3ft. in height, for her (ladies, please note): this saved the inevitable sulphur pit. To my surprise, she remarked, "What a marvel! What a wonder! There must be books printed about bees; I never saw anything like it before." Needless to say, I never before made better use of the "B.B.J." than when I had the pleasure of handing some back numbers to the lady thirsting for bee knowledge. It would be of some value, I think, to earnest bee-keepers if a pamphlet enumerating particulars and conditions of membership of B.B.K.A. could occasionally be enclosed with the "B.B.J." or *Record*: these would prove a welcome help in propaganda work, and might be conducive to a satisfactory increase in membership.

Acting on your advice in "B.B.J.," I wrote to the President of the Board of Agriculture and to our M.P., from both of whom very encouraging replies were received. Would that all bee-keepers had done likewise.

Queen bees are too precious just now for scientific purposes. I was fortunate in securing a fine queen wasp on Thursday last, which proved a valuable specimen for microscopical work. Is there any work published on the comparisons between the queen bee and queen wasp, and would the latter form a satisfactory substitute for the former for scientific investigation of internal organs, &c.?

I winter bees on heather honey, gathered sixteen miles from here, and always get them through in good heart and ready to speak for themselves, but 1912 heather honey was "scarce stores," and this spring the bees are crying out, "More! More!" and it is found necessary to feed them or be prepared for dwindled colonies.

With all good wishes to the "B.B.J.," which I invariably read from Editorial, Notices, &c., to Advertisements same day as received.—F. Woolley, Borobridge.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Appearance of Queen (p. 128).—Undersized queens which are "top-hole" are perhaps exceptional, and not the rule. I was doubtful whether I had not made too much of these queens in my recent note, but am comforted by the appearance of Mr. Quirin's remarks in the same issue.

Quantity of Nectar per Flower (p. 144).—Unless Mr. Flashman means "sugar" where he says "nectar," there is some serious error in his statistics. It is difficult to believe that one clover tube only contains $\frac{1}{500}$ grain of nectar. Surely this should be sugar. His subsequent reasoning confirms this view, as he reduces the total of florets visited in ratio with the consistency of honey, instead of increasing, as would be necessary to allow for the reduction of the nectar. Again, 7000 grains to the pound is rather approximate when it comes to millions, but, after all, a few thousands more or less fade into insignificance beside these amazing figures.

When May is out (p. 155).—"D. M. M." Your use of the well-known quotation is a generally accepted one, but it is not, I believe, quite correct. I have somewhere seen another explanation: the "May" is the hawthorn bloom, an even more reliable guide to the coming of warm weather than the arbitrary calendar, which is necessarily the same for all latitudes. (Clouts) pleasant word, may be cast sooner in the South than in the North, by a period somewhat corresponding to the earlier blooming, and in any given locality the May itself varies with the early or late spring, so that, taken in this sense, there is more reason in the old saw, "Ne'er cast a clout, till (the) may be out."

Animalogical or Anymorelogical (p. 165).—It seems to me that we occasionally wander far afield in our investigations, at least Mr. Smallwood does sometimes! As one of my own constantly renewed resolutions is never, no never, to refer to anything but bees in this column, I am somewhat handicapped in responding to the invitation to join the fray. But I see the connection between entomology and etymology quite clearly. Several recent discussions resolve themselves into, "How does A.B.C.?" So to business! I do not see Mr. Smallwood's difficulty in recognising "plite" as "pleat," or "plait," as our American cousins spell it. This pleated formation is exactly that of the abdominal "rings." But there is grave risk of Mr. Smallwood being led into the danger of punning—a sorry plight—by the very derivative wealth of our language, and I venture to suggest that the BEE JOURNAL is an unsuitable medium for puns! (Pun, Latin *punare*, to punish, implying danger; Mex., *peon*, a serf, or one who does double duty; Ang. French, *punait*, one skilled in the *double entendre cordiale*.)

Mr. Smallwood's own top roots would appear to be deep in the dictionary. As I understand him, the butcher uses a cleaver to split a hanging animal, but an insector to joint it. He would admit "cleft" so long as it is vertical in a boulder, but is in difficulties should the boulder roll over. One is led to wonder at what angle the Anglo-Saxon must go to the wall, and the Roman step it. Again, a bird cleaves the air in a vertical, and never in a horizontal direction. For my own part, I am inclined to *vertigo* in my efforts to arrive at the required *jous et horigo!*

Queries and Replies.

[8631] *Association v. Private Experts.*—I have been a member of the County Bee-keepers' Association for a few years, which has sent round an expert in spring to examine and report on my hives. This year a new man has been appointed, and I have received a circular from the late expert, offering to call *twice* a year and examine my bees for 1s. per hive. Do you think it would be wise for me to accept his offer?—PERPLEXED, Essex.

REPLY.—It would certainly be unwise. Stick to your County Association, as it can give you numerous advantages, such as cheap insurance, reduced entry fees at shows, and for examinations; these, of course, cannot be included in the expert's offer. Also the charge of 1s. per hive will come to much more than your annual subscription to the Association, for which, as already pointed out, several extra benefits are given.

[8632] *Strange Behaviour of Bees.*—Yesterday, the 23rd inst., one of my hives swarmed, and a neighbour kindly hived the swarm for me in my absence. The bees left the skep, and returned to the original pitching place about twenty yards from the stock, were returned to the skep, but some time after again left it and rejoined the stock. Neither of us (and my friend is a man of very considerable experience) has ever known such a case before, taking into consideration, of course, the following facts:—No queen-cells, several large patches of worker brood, stores (in fact, rather too much), and not candied; hive, dry and warm; stock, fairly strong. The day was very hot. As I cannot, however, agree with him on his suggested solution, we decided to write you on the subject, and shall be pleased if you will give us your opinion why the bees should have

acted in this extraordinary manner.—H .H. P., N. Somerset.

REPLY.—It is very difficult to say why the bees acted in this strange manner without an actual examination of the stock. We suggest that they were probably superseding the queen, and the bees came out with the virgin on her wedding flight. We have seen this happen.

[8633] *Uniting Bees.*—I have a frame hive of Autumn driven bees which have dwindled in spite of feeding, and I also have a skep about two years old, which I want to unite with the driven lot.

Would you be so kind as to tell me (1) When to unite them, and (2) Whether by driving or in some other way? They both have brood.—E. L. B., Rayne.

REPLY.—Shake the bees off the combs in the frame hive, drive the bees from the skep, put the skep over the frames as described on page 149 of "British Bee-keepers' Guide Book," with an excluder between. Flour both lots of bees and run them in as a swarm.

[8634] *Removing Irregular Brood-combs.*—I have a stock of bees on standard frames, which I wish to transfer into a new hive, but three or four of the central frames are joined together through the foundation having fallen out of one of the frames. I shall be very much obliged if you will kindly tell me, through the invaluable "B.B.J.": (1) The best way to separate them? (2) When I get them into the new hive would the bees build the combs irregularly again if I put a new frame (with full sheet of foundation wired in) between each of the frames that were connected in the old hive?—W. J. RICHARDS.

REPLY.—(1 and 2) When you transfer to a new hive put the combs braced together at the outside of brood-nest. As the brood hatches out, cut away the comb nearest the wall of the hive, and insert a frame of foundation in centre of good combs. Repeat the process until the irregular combs are all removed.

Bee Shows to Come.

June 10 to 13, at Windsor.—Honey Show of the Berkshire Bee-Keepers' Association, in connection with the "Royal Counties" Show. Liberal prizes. Schedules from D. W. Bishop Ackerman, 161, King's-road, Reading. **Entries close May 14th.**

June 25, at Richmond, Surrey.—Honey Show, in connection with the Richmond Horticultural Society's Annual Flower Show, in the Old Deer Park, Richmond. Open classes for amateurs. Special prizes for Honey and Wax. Apply to W. Cook, Hon. Sec., Holmesley House, Sheen-road, Richmond.

July 1 to 5, at Bristol.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod 23, Bedford-street, Strand, W.C. **Entries close May 31.**

TRADE CATALOGUE RECEIVED.

A. H. Wilkes, Lichfield Road, Four Oaks, Birmingham. The name of this firm is so well-known that the catalogue of 32 pages needs little comment from us. All the well-known "Wilkes" wire and aluminium goods are illustrated and described. We also note that Mr. Wilkes has been awarded first prize at three successive Royal Shows for Best Invention. Not only is his fertile brain devoted to inventing new bee appliances but also to the manufacture and improvement of gramophones, of which a good selection is listed in the catalogue, which may be had post free on application.

THE ENGLISH BEES IN MADEIRA.

The Mayor of Brighton speaking at the annual meeting of the Sussex Bee-keepers' Association at Brighton, the other day, told an amusing story relating to bees in Madeira. Referring to the reason for bees storing honey in excess of their needs, as a provision for winter, he said: "A curiously interesting fact in relation to this, has come to my notice. I have just returned from Madeira, an island of an extremely benignant climate. The native bees do not bother to make honey, and an Englishman residing there, a friend of mine, thought that if he brought out some English bees—there was a wealth of flowers unknown in warmer climates—the bees would make the most astonishing honey ever known. He imported some. The first summer they were extremely active, and, setting to work to provide for the winter, they made an amount of honey that was quite unprecedented. The other bees looked on, with their tongues in their cheeks (laughter)—if they had cheeks—and said nothing. The winter never came, and the bees found that in the winter the flowers were even more numerous and more rich than in the summer; so they quickly learned their lesson, and never bothered to make any more honey (loud laughter). Probably," added his Worship, "a series of hard winters and hot summers such as we read in the olden times, and believe, used to happen, are better for the bees than this weather experienced in these days."

Notices to Correspondents.

E. M. C. K. (Kentbury).—*Getting rid of Braula Coeca.*—(1) Although you do not smoke it is quite easy to administer tobacco smoke to rid the bees of the parasites. Get a small piece of tobacco paper, such as is used by gardeners for fumigating, and put this in the smoker wrapped inside a cartridge of ordinary

brown paper. You can then blow the smoke into the hive, but do not use too much. (2) You can paint the hives inside with Ayles' cure as a preventive.

J. P. (Monkseaton).—*Re-stocking Apiary.*—You might try again with bees obtained in the neighbourhood. Stand the hive on fresh ground if possible, or dig into the ground some unslacked lime as a disinfectant.

T. L. (Bournemouth).—*Using queen from diseased hive.—Drones cast out in April.*—(1) No. We should advise you to destroy the queen. (2) The drones are being cast out probably on account of shortness of food. This should be remedied at once.

J. Draper (Swanwick).—*Spraying Fruit Trees and Bees.*—Spraying can only harm the bees if it is done when the trees are in bloom. As this injures the flowers it is not the practice in this country to spray at such a time, being generally done either before or after blooming, therefore no injury is done to bees.

Juvenis Canis.—*Treating Diseased Bees.*—Personally we should not risk it.

Suspected Disease.

Welsh Busy Bee (Mont.).—The three lots of bees have all got "Isle of Wight" disease.

Constant Reader, Cumberland Reader, and E. R. T. (Bucks).—Bee have died from "Isle of Wight" disease.

D. N. Wynn (Shropshire).—The bees have died through being chilled while out foraging. Their stomachs were full of nectar.

T. G. (Doncaster) and R. Robson (Wooler).—There is no trace of "Isle of Wight" disease in bees sent.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.
Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ¼*in., or* 5*s. per inch.*

BEES WANTED, strong stock, must be healthy.—NEWMAN, The Hollies, Acocks Green. v 54

FINEST ENGLISH HONEY, 15s. per 28lb. tin; sample, 2d.—DUTTON, Terling, Essex. v 34

SEVERAL HIVES OF BEES, and sundry appliances, for sale.—SHACKLETON, Thorner, Leeds.

SEVERAL SKEPS HEALTHY BEES, 11s. 6d. each.—MULLEY, Poole House, Upton-on-Severn. v 62

MAGIC LANTERN, hardly used, triple burner, powerful lenses in case, complete; exchange for stock Goldens, or offers.—F. B. LONGLY (38), Hythe, Kent. v 55

"BRITISH BEE JOURNAL," unbound, seventeen volumes, complete, six with a few numbers missing; "British Bee-Keepers' Adviser" for 1889, complete; what offers?—F. HARPER, agent, Uttoxeter, Staffs. v 49

WANTED, position as Beeman, experience in Cheshire and Ireland, understands gardening, horses, &c., willing to do odd jobs as well, married.—Apply, A. B., c/o "B.B.J." 23, Bedford-street, Strand W.C. v 48

HEALTHY NATURAL SWARMS booked now from my Carniolan Hybrids, very prolific, May, early June, 16s. 6d.; late June, 14s., carriage forward.—E. EVERETT, expert, Rosebank Apiary, 40, Linden-street, Leicester. v 61

EXCHANGE, two strong stocks of Bees, on standard frames, for two strong store pigs, value 30s. each.—J. REAVELEY, Starbeck. v 60

GOOD STOCK OF BEES, on nine frames, 1912 queen, guaranteed healthy, 18s.—WATERSON, Hunter-street Burton. v 63

BEE APPLIANCES for sale, one year's wear, three hives, one new, owner going abroad.—GREGORY, Bentley Holt Heath, Worcester. v 51

5CWT. LIGHT CLOVER HONEY, in 56lb. tins, 59s.; sample, 2d.—COOK, Torwood, Ashford, Middlesex. v 59

FOR SALE, good sections, 6s. 5d. per dozen, free on rail.—J. M. BURMAN, Rothersthorpe, Northampton.

BEES.—A few surplus stocks, on frames, 15s.; or 18s. with 1912 queens, quite healthy.—THOS. EVANS, Loughton, Burwarton, Bridgnorth, Salop. v 52

TWO 28lb. tins Granulated Honey, 26s., gathered from blackthorn blossom.—A. E. ROWELL, Ashdon, Saffron Walden. v 83

SWARMS.—A few natural, healthy, 3s. per lb. till June 20th, boxes free, f.o.r.—E. MARSHMAN, Little Linford, Wolverton. v 57

EXCELLENT OPPORTUNITY. Owing to removal, three strong stocks, in W.B.C. hives; may be inspected any time; purchaser must arrange own removal, price 27s. 6d. per stock.—DODD, Melrose, Brighton-grove, Rusholme, Manchester. v 50

FIRST-CLASS EXPERT seeks holiday engagement for Whit-week and month of August, private, or with association; tuition for exams.; strong, healthy skeps of bees wanted.—WILSON, Apiary, Belper. v 47

COMPLETE volumes of "Gleanings," unbound, for 1908, 1909 and 1912, price 3s. 6d. each, post free.—MANAGER, "B.B.J." Office, 23, Bedford st, Strand W.C.

MICHIGAN WILLOW-HERB yields superb honey July till October, nine strong plants, 6d.; will few apiarists further test new I.O.W. cure; particulars; sample, 4d.—BOWEN, Coronation, Cheltenham. v 41

A FEW SURPLUS QUEENS FOR SALE, guaranteed 1912 bred, healthy and prolific, 6s. 6d. each.—ADAMS, Tilford, Heathhurst-road, Sanderstead. v 80

FOUR new W.B.C. hives, 14s. 6d. each; two extractors 12s. 6d., 10s. 6d.; exchange for bees, honey, or wax.—BOWDEN, Broomhill, Witley, Surrey.

HIVES, secondhand, guaranteed never contained diseased bees, new frames in body boxes, 5s., 7s. 6d. each; clean, healthy, shallow combs, 4s. 3d. 5s. 3d. dozen.—ANDREWS, Rock-road, Millfield, Peterborough. v 39

Editorial, Notices, &c.

BEE-KEEPING IN OTHER COUNTRIES.

Lecture by Thos. W. Cowan, F.L.S., F.G.S., &c., &c., given at the Conversazione of the British Bee-keepers' Association, March 27th, 1913.

(*Continued from page* 174).

BELGIUM.

Bee-keeping has made rapid progress in Belgium in the last twenty-five years, and although the skep and fixed comb hives still exist, they do so in gradually diminishing numbers. At the present time there are 30,000 frame hives in use, producing on an average 20 kilos of honey a year per hive, and 10,000 hives with fixed or semi-fixed combs—*i.e.*, hives with supers. In these last an average of 10 kilos. per hive is obtained.

Much of the progress is due to the Minister of Agriculture, who arranged for courses of instruction in bee-keeping in different localities and established professorships of apiculture in various agricultural colleges. His efforts were supplemented by numerous Bee-keepers' Associations, which organised exhibitions of bees, honey, and appliances, and brought bee-keepers together. The Government makes an annual grant of 1,200 francs to each Association for the purpose of these exhibitions and their organisation. In addition, there is a grant of 3,000 francs a year for lectures, various courses of which are given at different centres.

There are three groups of bee societies:

(1) Société d'Apiculture du Bassin de la Meuse, the oldest, founded twenty-four years ago, which publishes *Le Rucher Belge*, edited by M. Wathelet.

(2) Fédération Wallonne d'Apiculture is a new society, established last year, and publishes *L'Apiculture Rationelle*.

(3) Fédération Flamande, which publishes *La Gazette Apicole Flamande*.

The principal hives used are the Dadant-Blatt, a modification of the Dadant, the Voirnot (33 by 33 cent.), Layens and Cowan, with the British Standard frame. The first picture shows the apiary of M. Lejeune at Tohogne, with forty hives; the next that of M. Wathelet (Fig. 4), thirty

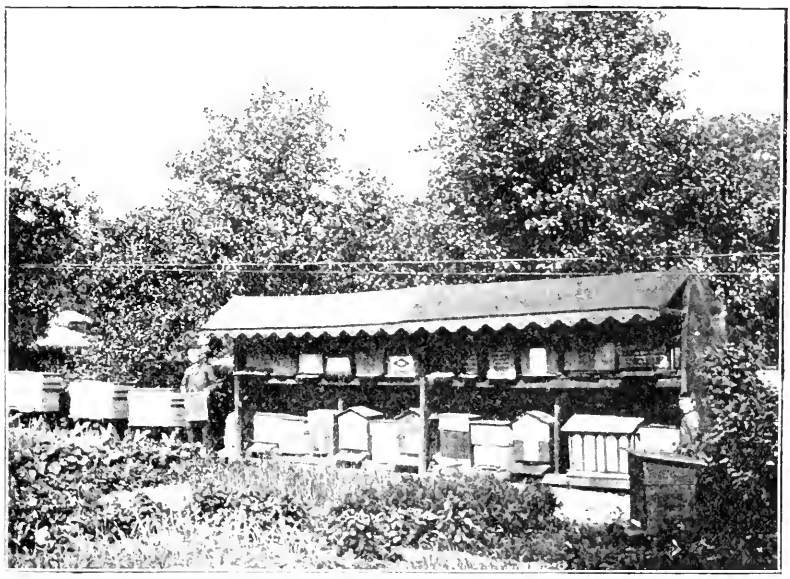


FIG. 4. APIARY OF M. WATHELET, BYON-TROOZ, BELGIUM.

hives of different patterns, among which are some Cowan hives, which M. Wathelet said he had used from the time he commenced keeping bees. The next is an interesting view of the apiary belonging to the Trappist Monks, of fifty hives. There are a few who use the de Kesel hive, with square frames placed diagonally, such as you see before you.

The State railways transport train loads of bees to pasturage at certain times of the year free of cost to the bee-keeper accompanying them, but he is required to pay third-class fare for himself to the destination.

Owing to the bad season last year the Government has also allowed a remission of the duty on sugar, so that bee-keepers

were able to purchase 5 kilos of debased sugar at 30 centimes per kilo for every colony they possess. Thirty thousand kilos were purchased by the society of the Meuse at a saving of 7,500 francs to the members.

There are still a few bee-keepers in Ardenne and Compine who only use hives with fixed combs, but frame hives are now found in all districts, and most in those of Liège, Namur, Brabant, Hainaut and Flanders. The village apiary depicted on the screen shows the style of tall skep prevalent in Belgium.

colonies of bees to every square mile of country, so that it will be seen to what extent bees are cultivated in Switzerland.

In the German speaking Cantons, which are by far the largest part of Switzerland, German methods prevail, and we find the upright hive generally in bee-houses, such as the one before you, which contains 112 colonies, although a few are adopting horizontal hives, opening at the top. The standard *Schweitzer Kasten* has a brood frame 36.1 by 28.6 centimetres (14½in. by 11¼in.), the small frames worked on top as supers being 12 centimetres

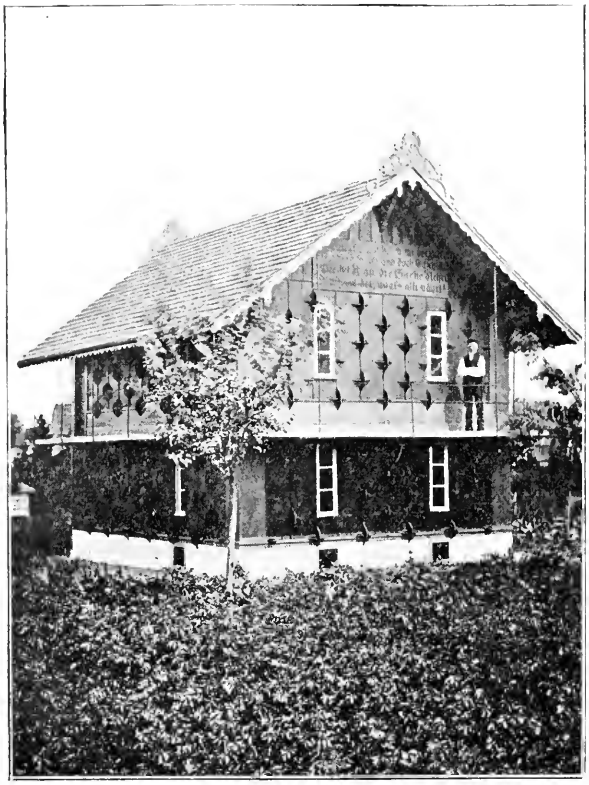


FIG. 5. SWISS BEE-HOUSE CONTAINING 224 COLONIES.

SWITZERLAND.

Among European countries, Switzerland has made the greatest progress, although it is a small country with only 3¾ million population. It is divided into three nationalities, distinct by their language, German, French, Italian, and a few Romanshe in Tessin.

There are 223,923 hives of bees, of which 191,165 (or 85 per cent.) were in frame hives, and 32,657 (15 per cent.) in skeps or boxes. In Canton Tessin boxes have been used from time immemorial. It will therefore be seen that frame hives are rapidly superseding those with fixed combs. Thus we get an average of 14.6

(4¾in.) deep, and sometimes two of these may be in use at the same time. Ten to twelve frames are generally employed, but the hive can be reduced to any number by removing frames and pushing up the glass door. The next picture shows a bee-house containing 224 colonies (Fig. 5). You will understand that such bee-houses are very costly, and having got them bee-keepers are reluctant to give them up for our style of hive. But the hives built in them are not convenient to manipulate at all. The frames have to be taken out to get at the one nearest the entrance, the frames being parallel with it. I had an experience of the in-

convenience of such hives at the National Exhibition in Zurich in 1883.

The Swiss have always taken a front rank as bee-keepers, and the honey obtained from the rich mountain pastures is celebrated. The Swiss Bee-keepers' Society includes a large number of men who have devoted their time and energies for the improvement of the industry, and science has figured largely in the results obtained. The Swiss do everything methodically and are great at statistics. For 28 years they have had stations for making observations in different parts of the country and at various elevations as shown on map before you, and at the present time there are 30 such stations, each in charge of a superintendent. At these stations observations are made as to the weather, minimum and maximum temperature, rainfall, daily weight of hives, both increase and decrease the flight of bees, amount of sunshine, direction of the wind, and principal flowers on which bees worked in the different months. Careful observation is made of the mortality during the winter months and condition of the bees in spring. All these observations are tabulated as seen in the diagram on the screen, and as they have been so for 28 years a good deal of valuable information has been collected.

The same careful study has been carried on with respect to foul brood, and all the 8,740 members of the Society are obliged to insure their hives at a cost of 5 centimes or ½d. per hive. The Government makes a grant towards the expenses, and for the last three years bees have been included in the Diseases of Animals Act, giving compulsory powers for inspection, which have had the effect of greatly reducing foul brood in the country and exterminating it entirely in some of the Cantons. It is absurd people in this country talking about legislation being no good. We have here an instance of the benefit of legislation even in so short a time. I would mention in this connection the work that has been carried on for some years at Liebefeld by Professor Dr. Burri, whose portrait is now before you, to whom we are indebted for his investigation of diseases of bees, which he has classified under four heads, viz., 1, Strong smelling foul brood; 2, Odourless foul brood; 3, Sour brood; 4, Dead brood free from bacteria.

The Society has also taken up race breeding, which has resulted in reducing swarming to less than 5 per cent., and there are a number of queen rearing stations in the mountains, and the greatest precautions are taken to keep the race pure. Italian bees are not encouraged in the German Cantons, and Italian queen breeders are not even allowed to advertise in the Society's journal. The educational work consists of courses of instruction in bee-keeping, queen rearing, and special courses are held for the study of diseases. The inspectors meet from time to time to compare notes and prepare reports, as also do the queen breeders, and at their meetings methods and results are discussed and the pedigrees of queens registered.

In the French speaking Cantons they have the *Société Romande d'Apiculture*, and here, owing to the influence of the teaching of M. Bertrand, whose portrait I now show, the principal hive in use is the modified Dadant, which gives excellent results. M. Bertrand has visited this country and is an honorary member of our association. There are 27,976 hives in these Cantons, 22,860 of which have frames and only 5,116 are either in skeps or hives with fixed combs.

Statistics similar to those of the German Swiss bee-keepers are kept, and there are 23 such stations, but they do not go in for race breeding to the same extent, and have besides the black bee, Italian, and Carniolan bees. There are a great many very fine apiaries, and although the skep and shallow boxes are still found at some of the chalets in the mountains, frame hives are in the majority. Switzerland is situated at high elevation, the Lake of Geneva being 1,250ft. above sea level, and in the mountain districts bee pasturage lasts a considerable time, so that when that in the valleys is over many bee-keepers take their bees to the mountains, and are in this way able to increase the amount of honey stored. The picture shows the way M. Bertrand transports his bees to the mountains. The following pictures show some of the apiaries in Cantons Vaud, Neuchatel, and some views of picturesque old-fashioned apiaries attached to chalets in the mountains of Valais at Saas Fee. There is one showing an apiary of 100 skeps near Ballaigues, and the apiary of M. Heyrand in winter.

The same legislation as to bee diseases is also operative in the French Cantons as in the others. Before leaving this part of Switzerland, I must allude to Huber, who was the father of bee-keeping in Switzerland, and lived at the end of the 18th and beginning of the 19th centuries. I am able to show his portrait, presented to me by a grandson of his, and a picture of his residence where he kept his bees and carried on his observations, and it is interesting to know that it is now occupied by a bee-keeper who has an apiary of modern hives on the same ground.

The Swiss produce excellent honey, but you find little of it at hotels, as the English tourists seem to prefer a concoction of glucose, which is called "miel de table."

(To be continued.)

SOUTH STAFFORDSHIRE AND DISTRICT B.K.A.

The first meeting of this Association was held in the Technical Schools, Stafford Street, Dudley, on Wednesday, April 23rd. Mr. Jesse Johnson, of Houghton, a member of the Staffordshire B.K.A. Committee, occupied the chair. The meeting was a great success, between sixty and seventy being present to listen to a lecture on "The Pleasures and Profits of Bee-keeping," delivered by that noted lecturer Mr. W. Herrod. Those who were not present missed a treat, as Mr. Herrod, who has not been heard in this neighbourhood before, spoke for an hour and a half, dealing with the subject in a masterly and interesting manner, and showed over one hundred splendid slides in all made from his own photographs. The Principal of the school kindly placed the electric lantern at the disposal of the lecturer, and his assistant volunteered to manipulate the lantern; this is no small way helped to make the lecture a success.

The Association has a bright and useful future before it with Lord Cobham as President; Mr. J. Price, of Haden Hill, Old Hill, as secretary; and Mr. A. W. Rollins, of 69, Hagley Road, Stourbridge, as expert. Those who desire further information should write to either of the latter gentlemen. Mr. Rollins has started on his spring tour of the members, every one of whom is to receive two visits per year—a very tangible return for their subscription.—*Communicated.*

CORRECTION AND ENCOURAGEMENT.

As a means of bolstering up very weak arguments it has been, and is constantly being, stated that "*all* the bees have been wiped out at Swanley," as if it were a new occurrence. Also one writer, with a mania for keeping the old-fashioned skeps of our grandfathers, proudly states that "The Experimental Apiary at Swanley was quite wiped out last year, 1912, yet a skep garden close by escaped." Now to be exact, there were several apiaries at Swanley, and the outbreak of "Isle of Wight" disease occurred in 1910 (three years ago). The skeps not affected, as plainly stated in the report, were those of the B.B.K.A., but there were other skeps also, and it was in these the disease first made its appearance. Even those skeps belonging to the B.B.K.A. succumbed before some stocks in frame hives. It is foolish to bring such arguments and misleading statements forward, for "Isle of Wight" disease, like foul brood, is no respector of hives, it will break out as readily in one as the other.

The Swanley apiary has never been without bees, and as encouragement to those who have suffered from "Isle of Wight" disease to persevere, the disease has not made a reappearance since 1910, although the bees have been kept on the same ground and in the same hives, both, of course, being properly treated. To-day (May 5th) I have put supers on some stocks, and from others which were so strong as to have ripe queen-cells artificial swarms have been made.

Walking through the large fruit plantations was a treat, as the blossom on the trees was alive with hive bees, whose merry hum was loud enough to make the inexperienced imagine that there was a swarm.—W. Herrod.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

HOW TO MAKE AN EXTRACTOR.

(*Continued from page* 164.)

We will now make the comb baskets or cages. These are in two halves, and are made 2in. wide inside, so as to take combs of any thickness and sections, if it be desired to extract the honey from them.

The wire cloth used for the purpose (Fig. 4) is made of stiff tinned wire four to five meshes to the inch. Two pieces (Fig. 4) are required 15in. by $9\frac{1}{2}$in. and two pieces 15in. by $9\frac{1}{4}$in. Get a strip of tin long enough to go right round the edges E E $\frac{3}{4}$in. wide and turn it up at right angles, thus ⌊ ⌋; now place the wire cloth inside this and solder it in, being very careful to solder each wire. Next hammer

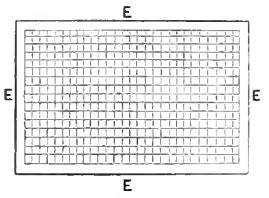


Fig. 4.

down the turned-up edges flat on to the wire and again solder each wire to these. They will then present the appearance of Fig. 4. We now have to make frames for them. The frames, however, have only two sides and a bottom. Tin $2\frac{1}{8}$in. wide will do, and turn up one edge at right angles for $\frac{1}{4}$in. Then bend them thus ▬▬, the long ends F F (Fig. 5) being when finished 15in. and the short one, G, $9\frac{5}{8}$in. for two of them, and the other two must be a little smaller so as to fit into these. We say when finished, because we intend to turn in a bead with a wire to strengthen the top and give something to

take hold of. The wire-cloth frame (Fig. 4) can now be soldered into these frames, and we shall have half a cage, as seen in Fig. 5, which shows a frame of comb in position. We then put a wire along the top H H, turning the tin over it and soldering the wire to the top end of the tin surrounding the wire cloth. The inner basket which has to fit into the outer one need only have the wire fixed along the top on that side where is placed

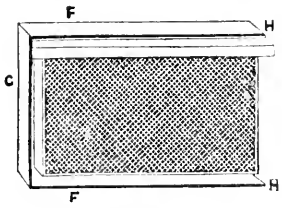


FIG. 5.

the wire cloth, as it would be obviously in the way if it were also at the ends. The baskets when put together are seen in Fig. 6. Should the frames have projecting shoulders, or long ends, holes must be cut in the bottom of the cages or in the wire cloth to accommodate them.

FIG 6

The advantage of these baskets is that any thickness of comb can be put in for extraction. Pieces either from skeps or other hives can also be very easily put in by opening the cages. Combs containing brood can also be laid in without damaging them, although we do not recommend any but the experienced to extract from such combs. The combs can also be reversed without touching the frames by merely drawing out and turning the

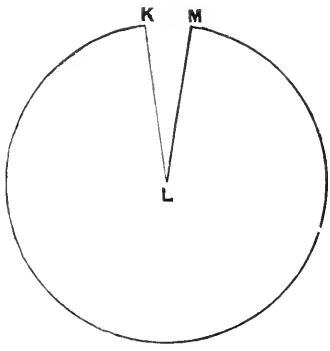


FIG 7

cages. Fig. 3 shows one pair of cages in position and the other being withdrawn. We prefer having a piece of folded tin I I (Fig. 2) fixed across where the crosses end, and this prevents any springing at the corners.

The can has to be made 18in. in diameter and 24in. high. The top and bottom must have a wired bead, and against it a strong hoop at least 1in. wide and of $\frac{3}{16}$in. wrought-iron. This may be riveted on to the can. There is no difficulty in making any part of the can except the conical bottom, J (Fig. 1). For this cut a circular piece as in Fig. 7. It must be 19in. in diameter and a piece, K L M, must be cut out of it as shown, $2\frac{1}{4}$in. wide, K M. Turn up the edges K L, M L $\frac{1}{2}$in. in width and draw the opening together. It will then present the form of Fig. 8. Tack on temporarily a piece of tin across the opening to keep it the right distance apart. Then turn down the edge all round the circumference and try this bottom in the can,

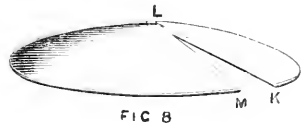


FIG 8

and if it is too tight or too loose untack the strip of tin across the opening and fix it in the right place. The bottom can now be laid down and a trough-shaped

FIG 9

piece (Fig. 9) soldered over the opening on the turned-up edges K L, M L. This must be cut a little larger than the wedge-shaped piece cut out of the bottom, and will form the channel leading towards the honey valve. The bottom can then be soldered from the inside into position as shown in Fig. 1. Then punch a hole at N and solder in the honey valve O. Before proceeding any further test the can by pouring water into it, and if it leaks remedy the defects.

The tin work is now ready, and we have only to put the machine together and put on the gearing. The amateur had better purchase the gearing P and honey valve O, as it will be cheaper for him to do so than to make them. The bracket Q has to be screwed on to the can, and the small gear wheel, which has a short length of iron rod, R, attached to it, is soldered into the top end of the hollow tin shaft into which it fits. A plain piece, S, carefully tinned, is soldered on the bottom, and this must work in a bearing, T, fixed to the bottom of the can, as shown in Fig. 1.

Should the bee-keeper prefer it, he can substitute for the gearing a cranked handle at the top end of the shaft, this being kept in its place by a wrought-iron bar placed across the can and screwed to it, but he must not expect the same speed with this as with the multiplying gear, nor does it work so smoothly or evenly. These extractors are also made with an extra can below them; and in this case they have no conical bottom, but instead there is a bar of flat iron for the bottom of the spindle to work upon. The bottom of the extractor is made to fit in the top of the can and a wire gauze screen is used through which the honey is strained. Of course if such a can is used to hold about 50lbs., both the conical bottom and the honey valve must be fitted into it instead of into the body of the extractor.

We hope that the description as well as the illustrations will be sufficiently clear to enable the amateur to make his own extractor.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

"ISLE OF WIGHT" DISEASE.

[8715] Although we have a long list of places each week where bees have died of "Isle of Wight" disease, I think the majority of bee-keepers are really in the dark as to the extent to which this malady has spread, or at least it seems so in the case of the district of Hexham. The usual answer on asking how the bees are faring is, "Oh, they are dead." I heard only last week of two men in the county who have lost forty stocks. Another bereft bee-man considers the disease was got at the moors, and his are gone. He may have a stock left I cannot say. We cannot get any information from these bee-keepers. Do they try to cure their bees? If so, how, for it seems useless to continue with any particular remedy if no good results. I hear that the disease is within three or four miles of my apiary, but whether to try any of the so-called preventives I cannot make up my mind. It seems quite possible more harm than good might result. I do not feel inclined to give them a bath (even should the dreaded disease appear), unless it has been proved more efficacious than at the present time. My object in writing this letter is to ask, will those who have had the misfortune to lose, or the good luck to save, their bees give us, through the "B.B.J." a short description of their experience. It could be given in a few words. They could merely state what had been tried and with what result. Perhaps the Bee Diseases Bill, when passed, will keep us better acquainted with local work. I trust the editors will find room for letters dealing with the subject, as they have done in the past.—NORTHUMBERLAND BEE.

[We are pleased to print anything that can throw fresh light on the disease, but no useful purpose can be served by devoting space to repetitions of experiences which are unfortunately only too well known to our readers. We hope correspondents will remember this.—EDS.]

IMPROVED HONEY JAR STAND.

[8716] In the April 24th number of the "B.B.J.," you kindly reviewed my new honey jar stand, but the illustration was wrongly described as being "Stand with lid open." This, however, does not show the *lid open*, but with the collar raised for taking out the empty jar and replacing with a full one. The description might lead people to think that every time honey was taken out of the jar it was necessary to raise the collar, as shown in the illustration, *but this is not so*, as the lid proper hinges on the collar, so that the latter need only be raised for replacing with a fresh jar.—B. BLACKBOURNE.

RANDOM JOTTINGS.

By Charles H. Heap, Reading.

WHY ARE STOCKS WEAK?

The condition of bees in spring presents a problem which is somewhat difficult of elucidation. I have had opportunities of seeing many stocks during the last few weeks, and I have been wondering whether the backward condition of the majority is due to some other cause than bad weather. Of course, the mild winter brought about undue activity among the bees, which led to a serious diminution of stores; but how are we to account for the backwardness of colony after colony in apiaries in which the bees have been fed with candy and syrup? Even colonies with an abundance of natural stores have been also in some districts in a very backward condition. I do not wish to put forward any theory, but the idea has occurred to me that the weakness of so many colonies may be due to ill-health among the bees as much as to the bad weather. I have noticed that in districts where cases of "Isle of Wight" disease occurred last year bees are, with scarcely any exceptions, backward, while in a few districts I have visited in which the disease has not appeared, or where any isolated case was promptly destroyed, the

bees are often strong. Indeed, on May 2 I saw a stock in which the queen had filled a good-sized skep with brood, and was fast filling up the combs in the frames over which it had been placed. The next day I discovered a colony prepared to swarm. The bees in the skep had not been fed, but the others had received syrup. In one village all the bees were in excellent condition, although there is nothing special in the flora of the district to account for it. Where there has been early blossom it has not helped the bees to any great extent, for the cold winds have been unfavourable to the secretion of nectar, and pollen gathering could not be carried on so well as it usually is during typical springs.

Supposing disease has been the cause of this year's weakness of stocks, it would operate in this way: *Microsporidiosis* would be contracted last summer or autumn, and the bees would be packed up to all appearances in good or fair condition in September or October. During the winter the bees which had contracted the disease would fly and be lost, and the remaining healthy ones would be too few in numbers to provide the requisite heat at the end of January to encourage queens to resume their egg-laying functions. If the hives could have been opened from time to time, it would most likely have been found that egg-laying was delayed for six or eight weeks, and has proceeded very slowly since. That such may be the course of events in a stock which contracted the disease last season is perhaps possible, for generally, when stocks die during the winter from *microsporidiosis*, only a teacupful of bees along with the queen is found in each hive. I do not recollect whether such bees have been microscopically examined for spores of *Nosema apis*, but it would not be surprising if such spores could not be found within the dead bodies. I always think, though I may be wrong, that the last remnant have died from cold through their inability to maintain the necessary heat. I hope that nothing I have been saying will be taken as established fact. My object is to start bee-keepers on a line of observation and thought.

Lack of Quilts.—So much has been written in the "B.B.J." on the subject of quilts for years past that anyone would think poor top packing would be a rarity. That, unfortunately, is not the case, for it is no uncommon thing to find at this time of the year hives with little more than a thin bit of calico or oilcloth over the frames. Feeders are also put on in such a way as to cause a draught to pass through the centre of the hive. Some people seem to have no idea that heat is of great importance in the rearing of brood and the secretion and working of the wax required for cappings. It is wonderful how some stocks survive, but that they do survive makes one wonder what they might have done had they been properly cared for. Amazing as it may appear, I have seen bees in a frame hive with nothing over the frames but a sheet of excluder zinc. There can hardly be too much packing in the earlier months of the year.

An Early Swarm.—The other day I was told with pride by a bee-keeper that he had a swarm on April 29. This had been sold, but I was invited to inspect the parent stock. A glance at the first comb taken out showed that something unusual had happened. Further examination showed that there was not a cell in the hive containing an egg or a larva. A few questions elicited the fact that the bees were transferred from one hive to another a month previously. Obviously the queen's abdomen was injured during the transfer, and she was consequently rendered sterile. The bees, dissatisfied with this state of things, had decided to try their fortune elsewhere. The queen, it may be noted, was searched for and found, so I was told, with the swarm.

Queries and Replies.

[8635] *Rightful Lawlessness.*—A bee-keeper in this district, not a quarter of a mile from my home, lost four hives of bees through "Isle of Wight" disease last September, after their return from the heather. In the interests of the others in the district he should have burnt all frames, covers, &c.; in fact, the burning of the hives would not have been a great loss, but he did not do this, but let them remain, and in the busy time six months later the hives were still standing, a great and grave danger to bee-keepers for a mile around, or more. Overtures were made to him to have them destroyed, by myself and others, but always with the same result, "Oh! to-morrow I will do it," but to-morrow never came. Now here is the point: Last night I took the law into my own hands, assisted by another bee-man, and had the miserable things carried to a suitable distance, put the lot together, travelling to and from his abode about four times, for quilts, matting, hives, &c., saturated the pile with paraffin and sat down contented to watch it burn, and what a beautiful sight it was, causing a slight reflection in the sky, but not once a reflection on our souls as having done wrong. To-day I feel contented, as I think that a duty has been performed in the interests of the bee world.

I know full well that I am liable to be prosecuted, but I should like to be satisfied on this point. Is there no law whereby a bee-keeper with this disease can be compelled to have everything destroyed at once? and will thank you for an answer through your most valuable paper "B.B.J."—BONFIRE.

REPLY.—Your position is that of scores of bee-keepers in this country. There is no law yet by which a man can be compelled to destroy infected hives, and very few people have the courage to do what you have done for the benefit of your fellow bee-keepers. You have our sympathy and we sincerely hope no prosecution will follow. A case or two of this description in the vicinity of the apiaries of the few who say legislation is not necessary would very quickly convert them. Bee-keepers should press there M.P.s to support the Bee Diseases Bill now before Parliament.

[8636] *Beginner's Queries.*—I started bee-keeping in May last with a stock of bees, which increased to two, and gave me about 26lbs. of honey. I made a cursory examination of the stocks lately, and found both strong and healthy. I now propose giving about 8lbs. to 10lbs. of candy, to be followed by thin syrup up to the time of putting on supers. (1) Is this correct? (2) I made a hive during the winter, and intend stocking it from the other two, as directed in the "Guide Book," with a view to avoiding swarming and securing a fair amount of honey. Is this to be recommended? I shall spring-clean the two hives shortly, using the new hive for the changes, as the old ones require painting. My first hive should be requeened, and I propose to buy two queens for this and the new stock, as it seems hardly worth while troubling with nuclei this year for only two queens. (3) I shall be glad to have your advice as to whether I am working on the best lines. There is one little suggestion, with all due deference to the Editor, I should like to make, and that is that when accounts are given of apiaries, or yields of honey, &c., the locality should be named, so that we amateurs can see what is being done in different parts of the country, and what we may expect; *i.e.*, an old bee-keeper, a neighbour of mine, says he never gets more than 20lbs. a hive in the district, as it is too cold. I should bow to his experience, but I feel certain this can be improved on. (4) Can you give me the necessary particulars of what to study for a third-class certificate, and oblige?—L. R., Durham.

REPLY.—(1 and 2) Yes, you are doing quite right. (3) You are working on the right lines. Many thanks for your suggestions. We give the particulars you name when possible, but we have to respect the wishes of our correspondents when they wish to remain anonymous. (4) The new rules and regulations for examinations will be ready in about three weeks. If you write the Secretary, British Bee-keepers' Association, then you will receive full particulars as to what to study.

[8637] *Difficulty with Non-standard Hive.*—I am sending a few questions which I shall be glad if you will answer in next week's BRITISH BEE JOURNAL. (1) About what time of the day shall I transfer a stock from a skep to a frame-hive, also must I use the smoker to quiet the bees? (2) I have bought some of Abbott's frames to stock my hive, and find that they just fit without any bee-way at the sides, the frames hang across the entrance, not as in the "W.B.C." hives. Must I have bee-ways at the side, or will the space at the bottom be sufficient? In buying frames ready fitted with foundation must I have some for drone breeding, or will the bees make their own? (3) I am only just starting as a bee-keeper; there are many things in the "Guide Book" that I cannot quite grasp. I am taking the "B.B.J." weekly and find many a useful hint in it. I started last year with three swarms. One died out this winter, but the one I hope to transfer seems very strong; the bees have been carrying pollen for a long time and are now very busy on the fruit blossom around. I am only a working man, but wish to keep my bees in the right way, as I have a nice garden.—MARGAM PARK.

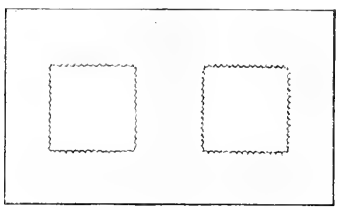
REPLY.—(1) You can carry out the work at midday, and you must use the smoker or a carbolic cloth to subdue the bees. (2) Your hive is not made the right size or the frames, which are standard size, would fit. If you put the frames into such hives you will have great trouble, and probably receive a severe stinging when trying to manipulate them. You should use full sheets of worker base foundation in all the frames. Do not put any drone foundation in, the bees will build plenty of this without you helping them. (3) We are only too pleased to be of service to working men, they are the class we are most desirous of helping.

NOVELTIES FOR 1913.

THE ROBERTS' SECTION WRAPPER.

A useful contrivance has been introduced by Mr. J. C. Roberts of Maidstone, in the form of a cheap and at the same time efficient wrapper for sections. It is difficult to show it in an illustration, as it is all white, but the designer describes it as follows:—

The advantages of the Roberts' section wrapper are: first, its cheapness; second, as the glass may be fixed beforehand in spare time it is a time-saver when that commodity is precious; when the sections are taken off they simply have to be wrapped, thereby glazing is done at the same time; third, it is neat and clean, as the paper covers the whole of the woodwork; fourth, it is impossible to overlace sections. Papers may be had gummed all over or plain. With the former the edges of the glass have simply to be moistened, pressed on to the wrapper, and allowed to dry; any adhesive matter may be brushed on to the edges of the glass,



and the above process repeated with the plain papers.

Gauges may be had which make it impossible to fix the glass in the wrong positions, and full instructions are given as to the best way to wrap up the section. These wrappers can be used on cut down sections for show purposes by cutting the paper in halves. The wrappers and gauges may be had from Messrs. James Lee and Son, George Street, Uxbridge, who for a Id. stamp will gladly send a sample post free.

Bee Shows to Come.

June 10 to 13, at Windsor.—Honey Show of the Berkshire Bee-Keepers' Association, in connection with the "Royal Counties" Show. Liberal prizes. Schedules from D. W. Bishop Ackerman, 161, King's-road, Reading. **Entries close May 14th.**

June 11 and 12, at Braintree.—The Essex B.K.A. Annual Show, in connection with the Agricultural Society's Show. Open classes. Mr. W. Herrod will judge exhibits, and lecture in Bee Tent both days of show. Schedules from Mr. T. E. Lennox-Brown Eagle House, Little Coggeshall, Essex. **Entries close May 31.**

June 25, at Richmond, Surrey.—Honey Show, in connection with the Richmond Horticultural Society's Annual Flower Show, in the Old Deer Park, Richmond. Open classes for amateurs. Special prizes for Honey and Wax. Apply to W. Cook, Hon. Sec., Holmesley House, Sheen-road, Richmond.

July 1 to 5, at Bristol.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

July 17 and 18, at Lincoln.—Lincolnshire Agricultural Society's Show. Honey section, under the management of Lincs. Bee-keepers' Association. Prizes value £30. Open classes for Appliances, Observatory Hives, Extracted Honey, and Sections. Schedules from J. H. Hadfield, hon. sec., Alford, Lincs. **Entries close June 14.**

July 23, 24, and 25, at York.—Show of Hives, Honey, &c., in connection with the Yorkshire Agricultural Society's Show. Liberal prize list. Schedules and particulars from J. Maughan, secretary, Blake-street, York.

TRADE CATALOGUE RECEIVED.

Messrs. Abbott Bros., Southall.—The forty-eight page catalogue issued by this well-known firm is quite equal to any previous issues. The many prizes won at shows by Messrs. Abbott speak well for the quality of their goods, which may be equalled, but certainly not excelled.

Particular note should be made of the "Fairlawn" and "Southall" (a divisional brood-chamber hive) hives which are a new production, and the design of which has been registered. This firm's honey spoon also continues to be very much in demand, and the variety of honey jars shown should appeal to all tastes. The catalogue will be sent upon receipt of a post card.

Notices to Correspondents.

ECONOMY (Cheshire).—*Purchasing Italian Queens.*—The queens from the foreign firms advertising with us are quite suitable for your purpose.

M. C. H. (Caterham).—*Wild Bees.*—The insects are the species *Andrena*. They are solitary bees, and quite harmless, therefore it seems unnecessary to destroy them.

NORTH OXON.—*Warwicks B.K.A.*—The Secretary of this Association is Mr. J. N. Bower, Knowle, Warwicks.

G. F. B. (Mansfield).—*Moving Bees.*—You must not confine the bees to the hive or you will kill them. As they have not flown much this season very little harm will be done if they are moved straight to the new location. They should be moved without delay, the work being done at night.

PLUM BLOOM (Sheffield).—*Hyacinths as Honey-yielders.*—Yes a little.

C. F. (Bracknell).—*Making Increase.*—When there is a ripe queen-cell in the hive, which will be May or June, move the old stock to another position, put a new hive in its place with nine frames fitted with full sheets of foundation. Search for the queen in the stock, and when found put the comb on which she is in the centre of the new hive. The flying bees will go to their old location, and as the queen is there you will have an artificial swarm. The young bees will remain in the old stock, and the queen hatch out to be the mother there.

T. W. B. (Golders Green).—*Bee Association.*—We do not know of an Association at Finchley, but there is the Barnet and District B.K.A., which you might join. Write for particulars to the Secretary, Mr. G. J. Flashman, 37, Falkland Road, Barnet.

Honey Sample.

J. K. G. (Dumfries).—The honey has no aroma and very little flavour. We should say its source is white clover.

Suspected Disease.

A. H. COURT.—The bees are suffering from "Isle of Wight" disease, for which no cure has yet been found. Most certainly your neighbour should have destroyed the comb-frames, &c., and disinfected the hives. He is greatly to blame in leaving them for other bees to rob, and has probably caused infection to spread all around the neighbourhood.

WORRIED (Herefords.), FRUIT-GROWER Braintree), and RODBRO (Stroud).—The bees have died from "Isle of Wight" disease.

R. A. C. R.—(1) The symptoms are those of "Isle of Wight" disease. (2) Do not try experiments, but destroy the stocks showing signs of infection, burning all dead bees, fittings, &c., and disinfecting hives thoroughly. (3) No: these bees are not more susceptible than others.

J. A.—The comb contains chilled brood only.

A. J. H. (Yorks).—The bees have "Isle of Wight" disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

APIARY FOR SALE, lease terminating.—Seven colonies, fourteen hives, and complete outfit, Sladen's British Goldens and Blacks, all young queens, perfectly healthy; purchaser must remove.—YETTS, The Wood, Maybury, Woking. v 78

THE BEES, &c., are all sold.—SHACKLETON, Thorner, Leeds.

1 CWT. EXCELLENT HONEY FOR SALE.—CARTWRIGHT, Shawbury, Shrewsbury.

A YOUNG PROLIFIC BRITISH QUEEN, 5s.—ALUN JONES, Bryn Awel, Halkyn, Flintshire. v 83

VACANCY FOR PUPIL on bee and poultry farm, including day old chick business, good home.—No. 73, "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 93

20 28lb. tins best medium honey, 56s. cwt.—ROBERTS, certified expert, 5, Tonbridge-road, Maidstone. v 65

OUTDOOR CHRYSANTHEMUMS, strong plants, named, carriage paid 2s. dozen.—MOIR, Calderbridge, Cumberland. v 65

FEW STRONG SWARMS, from 10-frame hives of healthy English bees, selected strain; full particulars; stamp for reply; May delivery.—NORTH, Cressing, Braintree, Essex. v 68

A FEW CHOICE 1912 QUEEN BEES FOR SALE guaranteed healthy.—CROWE, Central-avenue, Wigston, Leicester.

SALE, hives, two, good condition, and all appliances, cheap.—SMITH, Elphin, Spring-lane, Woodside, S.E. v 69

TWO good, strong stocks, in hives, with two supers, complete, guaranteed free from disease.—H. FIRTH, 33a, Rock Park, Rock Ferry, Birkenhead. v 74

FOR SALE, about 70lb. pure English honey; what offers?—FULLER, Urchfont, Devizes, Wilts. v 75

FOR SALE, guaranteed healthy swarms, 10s. 6d., upwards, no disease; also 1912 queen bees, 3s. 6d.—DAY, Pinwall, Sheepy, Atherstone. v 75

CLEAN shallow super combs, 3s. dozen; W.B.C. section racks, nearly new, 1s. 9d. each; good secondhand hives, new frames, excluder, and rack complete, 5/-; offers wanted quantity light beeswax, suitable for show.—R. JOHNSON, Little Hinton, Swindon. v 70

SITUATION WANTED by second class expert, business experience, good carpenter, painter, fair mechanic microscopist, &c., good references.—W. H. W., c/o "B.B.J." Office, 23, Bedford-street, Strand, W.C.

EXCHANGE for bees and hive, Ransome lawn mower, with box, valued 30s., equal new.—5, Fox Hollies-road, Acocks Green, Birmingham. v 77

SIX W.B.C. HIVES, complete, take 10 and 12 frames, clean and healthy; exchange bees, or sell 7s. 6d. and 5s.—PEARS, 31, Pugin-street, Carlisle. v 78

FOR SALE through giving up bee-keeping, excellent honey extractor and ripener, in good condition.—Apply, LANE, Ford-place, Thetford, Norfolk. v 79

SWARMS.—Wanted, purchaser for swarms as they issue from thirty-four stocks, all strong and healthy; particulars.—HAZZARD, Haddenham Ely. v 80

BARGAIN; extractor, 2-frame, geared, good condition, 16s.; several clean, sound, single-walled hives, well painted, 4s. 3d. each; several ditto, Claustral pattern entrances, calico covered roofs, 2 lifts and eke, floor ventilator, 6s. each.—E. JACQUES, Walsall-road, Lichfield. v 84

EXCHANGE, good pen White Wyandottes, four pullets in full lay, and unrelated cockerel, for healthy stock bees, on frames; also 50-egg Prairie State incubator, reliable hatcher, for ditto.—AVERY, Deverell, Warminster. v 85

FOR SALE, lady's bicycle, good condition, 35s.; small sack truck, 7s. 6d.; fifty bags malt-culms for poultry, 3s. bag; exchange healthy swarms.—155, Moston-lane, Manchester. v 72

38 LB. of PURE HONEY, in bulk, for sale; what offers?—KEW, 5, Grosvenor-terrace, Wantage. v 85

CABINET EDITION DICKENS, complete; "The Apiary," by A Neighbour; "Practical Horsekeeper," by Flemming; "The Horse," 10s. 6d. edition, Wm. Youatt; what offers?—LONGHURST, Wantage-road, Wallingford. v 82

WANTED, position as Beeman, experience in Cheshire and Ireland, understands gardening, horses, &c., willing to do odd jobs as well, married.—Apply A. B., c/o "B.B.J." 23, Bedford-street, Strand W.C. v 48

BEE APPLIANCES for sale, one year's wear, three hives, one new, owner going abroad.—GREGORY, Bentley Holt Heath, Worcester. v 51

SIX W.B.C. HIVES, as new, perfectly clean, covered roofs, 10s. 6d. each.—KITSON, Stanstead, Essex. v 89

COMPLETE volumes of "Gleanings," unbound, for 1908 1909 and 1912, price 3s. 6d. each, post free.—MANAGER, "B.B.J." Office, 23, Bedford st, Strand W.C.

MICHIGAN WILLOW-HERB yields superb honey July till October, nine strong plants, 6d.; will few apiarists further test new I.O.W. cure; particulars; sample, 4d.—BOWEN, Coronation, Cheltenham. v 41

Editorial, Notices, &c.

BEE-KEEPING IN OTHER COUNTRIES.

Lecture by Thos. W. Cowan, F.L.S., F.G.S., &c., &c., given at the Conversazione of the British Bee-keepers' Association, March 27th, 1913.

(*Continued from page* 183.)

GERMANY.

To Germany more than to any other country is apiculture indebted for the science connected with bees, and such men as Schirach, Dzierzon, Berlepsch, Siebold and Leuckart have rendered valuable assistance in clearing up much that was obscure in connection with the life of the bee. It was Schirach who discovered that on the loss of a queen another could be reared by the workers from worker larvae placed in houses of various sizes and designs, and some of these houses have simply divisions in them forming the hives, which, of course, are not movable, and for moving bees all the frames have to be taken out and carried in boxes made for the purpose. As will be seen, many hives are housed in sheds and can be moved and taken to the heather when needed. The pictures show different apiaries and bee houses, in one of which you will see an appliance for securing swarms. There is a large bee house containing 100 hives (Fig. 6), access to which is obtained direct from the house of the owner on the first floor, so that he can attend to his bees without going out of doors. Gravenhorst's Bogenstulper is also shown, and the next diagram shows the large variety of appliances used on the Continent.

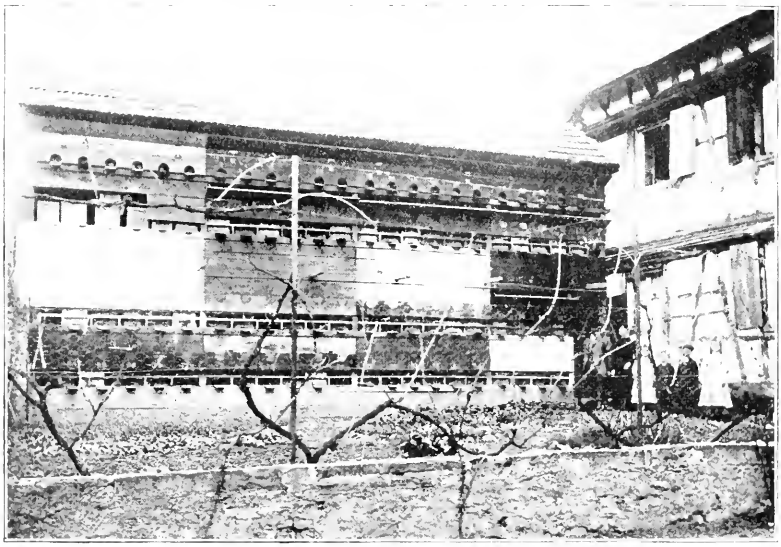


FIG. 6. BEE HOUSE OF TH. HERTRICH, NORDHAUSEN.

under three days old, and Dzierzon propounded the theory of parthenogenesis, which was proved to be correct by the experiments of Berlepsch, Siebold and Leuckart. In recent times we have Drs. Maassen and Zander, who have done so much work with bee diseases, the latter having discovered *Nosema apis*, found in what we have called "Isle of Wight" disease. He has also done good work in connection with the anatomy of the bee, and his "Bau der Biene" shows an immense amount of painstaking labour.

Most of the bee-keepers use the vertical hive opening at the back, with three storeys of small frames similar to those used in Italy, and which you see before you, although there are a few who have horizontal hives. The hives are usually

There is a peculiar instrument like a sharp fork used for uncapping combs, and the next picture shows an apiary of a cottager who makes his own hives. They are all painted different colours, as shown, and present a curious appearance.

In some parts of Germany hives with fixed combs are used, and the Lüneburg heath bee-keepers still use straw skeps, as will be seen from the pictures of some of these apiaries. The heath bees differ from the ordinary brown bees in being great swarmers, and this feature has been developed by the peculiar method of bee-keeping in these districts, the brown bee not being so liable to swarm. I show you one of the skeps used and how the combs are kept firm, also the method of driving bees. A great many bee-keepers transport

their bees to better pastures and to the heather, and for this purpose they have vans specially fitted up as bee-houses, such as those now shown. The vans, together with the bees, are taken to their destination and brought back when the harvest is over. Some of the vans are fitted up with a bed so that the bee-keeper can accompany his bees.

The picture of M. Dennler's apiary is particularly interesting, because the house is covered with a vine which carries 680 bunches of grapes, the enormous crop being due to the proximity of the bees and consequent pollination of the blossoms. M. Dennler is the energetic editor of the Alsace Bee Journal, and has done much for bee-keeping in Alsace.

In Alsace bees are taken to the forests in the Vosges mountains for the purpose of collecting the honey-dew produced in abundance by the conifers in these regions, and which is highly esteemed on account of its flavour and medicinal properties. The Bee Societies have extensive buildings, such as those shown, in these mountains, and bee-keepers place their hives in them during the honey-dew season, a caretaker being left in charge.

There are 2,619,891 colonies of bees in the German Empire, and more than half of them are in frame hives.

A great deal of educational and experimental work is carried on in connection with the Agricultural Colleges, and I would particularly mention that done at Erlangen, where there is an experimental apiary under the superintendence of Dr. Fleischman and Dr. Zander. The series of pictures I now bring to your notice show different parts of the apiary and gardens, and the plan shows the general arrangement. Different races of bees are kept and their qualities tested, bee diseases are investigated in the laboratory, in which you see Dr. Zander at work, and there is a heated glass-house in which experiments are carried on with bees at all seasons of the year.

Exhibitions are held, some of them very picturesque, owing to the diversity of native costumes still to be seen in some parts, and I am able to show four pictures of an interesting exhibition in Alsace held at Mülhausen. The heather honey obtained by the Lüneburg bee-keepers is used for making gingerbread, and some such cakes called "lebkuchen" and "laekerli" are shown in one of the pictures, which were sent me by M. Dennler.

Diseases of bees are making such havoc in Germany that the Government has been obliged to legislate, and has included bees under the Diseases of Animals Act, so that inspectors have compulsory powers for inspecting apiaries and treating or destroying diseased colonies.

FIG. 7. APIARY OF SIGNOR D. SOGNO, CAMANDONA.

As I do not wish to tire you, I ought now to conclude ("Go on") and continue at some other time, but as you seem to wish me to go on I will say a few words about Italy and show some of the pictures of apiaries in that country.

ITALY.

There are no statistics in Italy of either the number of hives or the amount of bee products, but considerable bee-keeping is carried on in many parts of the country. It is quite the usual thing to find honey served at all the hotels.

Since the founding of the Italian Central Bee Association in 1867 for the encouragement of bee-culture, Count Barbo, who was President, and edited the official journal, *L'Apicoltore*, took an active part in advocating the rational culture of bees, which up to that time was unknown in Italy. There are many districts where the pasturage is abundant, but the standard hive is small, and has the smallest frames of any in use. The hives are of the upright German cupboard pattern, in which the frames slide in from the back and run parallel with the entrance. The size of the frame is 42 by 25.5 centimetres (16½in. by 10in.), and the half frame 21 by 25.5 centimetres (8¼in. by 10in.). There are several other hives in use, and Dr. Dubini introduced one on our plan with frames 43 by 20 centimetres (17in. by 7⅞in.). Each hive had seven frames, and two hives were worked one on the top of the other. Latterly a larger hive has been introduced, and a good many use the Dadant hive. At some of the agricultural colleges bee-keeping is taught, notably at Caralina, where such hives as the Dadant-Blatt, Layens, Sartori, Dzierzon and Fumagalli hives can be seen in operation. They are picturesquely placed on the slope of a hill. A diary is kept by the students of all work done in the day and all observations are noted. There is a similar school at Perugia.

As will be seen, some of the apiaries are quite extensive, that of Signor Sogno in Camandona (Fig. 7) shows a bee shed with upwards of fifty Italian standard hives, and that of M. Falcucci (Fig. 8) is furnished with the Dadant hive. There are still a good many straw hives used by the peasants as well as boxes, and even small casks are brought into requisition, failing a better receptacle.

The portrait is that of Dr. Bianchetti, who did a great deal for bee-keeping, and whose apiary of 100 hives is shown. He devoted a good deal of time to me while I was in Italy on two occasions.

The honey in many of the districts is not only abundant, but of fine quality, and that obtained from the acacia highly esteemed for its fine aroma.

Italy is known for its race of bees, which are principally raised in Italian Switzerland in the Canton Tessin. The name "Ligurian Bee" is a misnomer, for as a matter of fact the bees in Liguria are black, and have not got the yellow bands which are found in those further East. A very large trade is carried on with Italian bees, and there are many raisers who give their whole time to breeding queens for export to all parts of the world.

FIG. 8. APIARY OF SIGNOR B. FALCUCCI, ALTESSA.

All the countries mentioned have laws for the protection of the interests of bee-keepers, and France has laws also for the protection of the public. For instance, bees may not be kept within a certain distance of a road, and some of the restrictions imposed by local authorities are so arbitrary and ridiculous that bee-keeping cannot increase at the rate it otherwise would, and the penalties are so heavy that

it is dangerous to keep bees in or near towns.

I must now conclude and thank you for the patient attention you have given me, for I feel I have taken up a great deal of your time. I have only been able to speak about a few countries, but there are many others which I have visited that may interest you, and on a future occasion I hope to speak of bee-keeping in Russia, where honey is produced by the ton, and it may interest you to know what is done in the Balkan States, where war is now going on, and in some of the other European countries. Then to describe bee-keeping in the British colonies and the United States of America would take up considerable time, and if at some future date you will allow me to speak again I shall be pleased to do so.

Mr. Reid, in proposing a vote of thanks to Mr. Cowan, said he was sure he was expressing the feeling of those present when he said that he thought the best part of Mr. Cowan's remarks was the last one, that on some future occasion he will give them a similar treat to the one they had just had.

Mr. Cowan then returned thanks and the meeting concluded.

At the conclusion of the conversazione interesting articles were shown by Rev. F. S. F. Jannings and Mr. B. Blackbourn. The former showed his embedder heater, particulars of which have already appeared in our columns, also a very neat home-made hive tool, which acts as either a leaver or scraper, and a home-made holder for the reel of wire when wiring frames. This is so constructed that it can be fixed anywhere on the table or bench by sticking a couple of spikes into the woodwork and resting the other end on a match-box. Mr. Blackbourn showed his new honey jar stand, which we have fully described and illustrated lately in the "B.B.J." among the Novelties for 1913.

REVIEW.

"The Childhood of Animals," by Dr. P. Chalmers Mitchell, F.R.S. (London: Messrs. W. Heinemann, price 10s.)—Dr. Chalmers Mitchell's position as Secretary to the Royal Zoological Society gives this work additional interest, for he has been able to give the direct results of his own observations in dealing with the "Childhood of Animals." It is easy to see that he has brought to his task the enthusiasm of one who knows his subject thoroughly, and it is evident that it has been a pleasure to him to impart to others the information which throughout his connection with zoology he has been able to obtain by observation and study, and has noted as throwing light on the nature of that period of the life of animals which we call childhood. The author explains in the preface how he came to write the book, it being the result of some lectures on the subject given by himself at the Royal Institution in 1911 and 1912. These aroused such interest that he was induced to embody them in book form, which he did with much additional detail, that could not be included in a lecture.

The result is a most fascinating work which holds one's interest to the last page. The fifteen chapters into which it is divided deal with different phases of the life of young creatures, their food, education, the purpose of youth, the taming of animals, &c., and each is a comprehensive study of the subject given with a minuteness of detail which evidences the painstaking care and the enthusiasm with which Dr. Mitchell has produced this delightful book. It is interesting alike to the student and to the ordinary animal lover, and should appeal to the latter as bringing to his notice wonders that will tempt him to venture still deeper into Nature's mysteries.

Dr. Mitchell's views are certainly not conventional, and did space permit we should like to quote many original observations, which would perhaps startle the unthinking, but he states them boldly, and with a conviction born of knowledge and experience as rare as it is refreshing. For instance, in writing of the dog, "the friend of man," as it is called, that most spoiled, petted, ill-used, and loved of all animals. What would a dog adorer say to this? "Like most people, I am very fond of dogs, but it is an affection without respect. Dogs breed freely in captivity, and in the enormous period of time that has elapsed since the first hunters adopted wild puppies, there has been a constant selection by man, and every dog that showed any independence of spirit has been killed off. Man has tried to procure a purely subservient creature, and has succeeded in his task. No doubt a dog is faithful and affectionate, but he would be shot or drowned or ordered to be destroyed by the local magistrate if he were otherwise. A small vestige of the original spirit has been left in him, merely from the ambition of his owners to possess an animal that will not bite them, but will bite anyone else. And even this watch-dog trait is mechanical, for the guardian of the house will worry the harmless, necessary postman, and welcome the bold burglar with fawning delight. The dog is a slave, and the crowning evidence of his docility, that he will fawn on the person who has beaten him, is the result of his character having been bred out of him. The dog is an engaging companion, an

animated toy, more diverting than the cleverest piece of clockwork, but it is only our colossal vanity that makes us take credit for the affection and faithfulness of our own particular animal. The poor beast cannot help it; all else has been bred out of him generations ago."

It is not possible in the short space at our disposal to mention a tithe of the wonders that a perusal of the book reveals to us. We can only advise those who have the slightest inclination to study Nature to read it, and enjoy for themselves this unique production, which is presented in so engaging a form by a writer who has had especial advantages; and who, in addition, has the gift of making his readers think, as their interest is aroused in spite of themselves. The book is illustrated with several beautiful coloured plates by E. Yarrow-Jones, M.A., and numerous drawings by R. B. Brook-Greaves, which greatly add to its interest and attractiveness.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of April, 1913, was £4,237.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

AMONG THE BEES.

By D. M. Macdonald, Banff.

AIDING BEES JUDICIOUSLY.

I am rather an advocate of leaving the bees alone to work out their own salvation unaided, from the time when in late autumn they are left with "millions of honey" in the brood-nest until they start on the chief honey-flow in summer. Judiciously aiding some stocks, however, tells on the autumn's surplus, because it brings more individual colonies forward into the front rank, and therefore makes the total yield heavier. Take, for instance, three stocks early in the season standing in three classes: good, fairly good, and the third only fair, but all possessed of good queens. Leaving the strongest for a time to its own devices, I would, with the other hives, periodically uncap some cells in a full comb placed next to the brood cluster, thus giving the bees an excellent stimulant of Nature's own stores, and thereby I would expect to encourage bees and queen to keep up active brood-raising at an accelerated rate. Under the impression that they are aiding the weakling, many, even at an early date, start syrup stimulation, thus driving out the bees even in unfavourable weather to search for pollen and water, two requisites necessary at that period for successful breeding; but following this active outside labour out of season, so many bees either die or age prematurely that the loss pretty well balances the gain, with the result that the last state of the stock may be worse than the first.

Value of Honey.—The value of honey as a food cannot be kept too prominently to the front, and a word in its praise now and again is necessary. The ancients valued honey far more highly than we do. It is, however, well known that it contains certain properties more valuable than its simple sweetness. It is of great value because, being a predigested food, and on this account being so easily assimilable, it can be used by many who would find sugar injurious to the system. From a German source we find that it contains iron, a property of the greatest value in securing pure, healthy blood, and the chief value of this constituent of pure blood is that it is supplied in honey in a condition permitting it to enter into the system directly the sweet is partaken of. The same authority declares that honey also contains "phosphorus, chlorine, lime, sulphur, magnesia, silicon, potassium, natron, and manganese," all in the best form to be made easily assimilable. This is why in cases of severe anæmia honey has been found so valuable a food for the invalid. "It cleanses the blood," is one of the very many "virtues" of good honey so frequently emphasised by ancient writers, and even so high an authority as Mahomet declares that it is of more value as a health-giver than the drugs provided by the medical faculty.

Comb Capacity.—A standard comb is estimated to contain about 5000 cells, and perhaps about 4500 of these may be occupied by brood and eggs at the same time. Even in the height of the season, bees like to store honey in the top corners of almost every comb, and very generally the cluster may be surrounded by sealed or unsealed cells, more or less filled with honey or newly gathered nectar. It is a treat to see a fresh comb, or one being drawn out from a sheet of foundation, one mass of eggs after a period of about forty-eight hours after insertion. It is worth while thus renewing a certain proportion of combs every year after they have been in the hive some time, particularly if they have not been well built, or if they show too large a proportion of drone-cells. A single pound of bees may take charge of from two to three combs during the season, but when comb-building is going on, perhaps one comb to three-fourths of a pound of bees is best. In this case a swarm weighing 4lbs. should at first have no more than six combs given them to build. Gradually extend the space by inserting an additional frame in centre of brood-nest if weather is warm. Endeavour to place it between two of the most

perfectly built combs in the hive, to secure that it will be well and truly built; and this will be the more certainly obtained if the combs between which it stands are full of newly sealed brood. This is a hint well worth attending to.

For and Against House Apiaries.—Advantages: (1) The vicious bees are much gentler when handled in a house-apiary. (2) Work can be done in any weather, wet or dry. (3) There is no danger of honey melting in excessive heat. (4) The hives need no painting and are practically everlasting. (5) There is no danger of animals knocking over the hives and being stung to death. (6) There is an effective means of preventing thieves reaching bees or honey. (7) The bees do not consume so much honey in winter as they do on outside stands.

Disadvantages: (1) The early morning shade is too dense; hives outside start earlier than those in the house. (2) The bees outside gather more honey. (3) Those outside can be manipulated quicker. (4) The first expense of the building is no small item. (5) Bees intermix more than is good for some hives. (6) Young virgins out on their mating trip fail to return to their own home. (7) Unless sheltered, bees during a gale get very much mixed up when coming home from the fields.

The foregoing is a brief summary of some of the pros and cons I have seen in regard to house apiaries. For several reasons these erections have never been regarded with much favour by bee-keepers in this country, and very few indeed who carry on the industry on anything like a large scale will have anything to do with them. In Germany and Switzerland they are exceedingly popular as homes of the bees.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BEES ON THE FARM.

[8717] "Bee-keeping, owing to the bad repute of the old straw skep, has got an ill name amongst farmers."—D. M. M.

I am still so astonished by this statement from our usually cautious veteran that I have been obliged to set it down word by word to see if I have read it right. Apparently I have, since the rest of the argument is devoted to trying to prove that modern bee-keeping is less trouble than the old style. Surely this is stretching antipathy to the skep to an unconscionable degree?

What, when we come to scan it over, is the sum total of the skeppist's operations? From September to May, nothing. No packing down for winter; no stimulative feeding; no queen-raising, uniting, equalising of stocks; nor the hundred-and-one other operations practised more or less by the wise followers of modern methods.

In May and June, what? Swarming, certainly. But what did this entail? A bunch of bees shaken into a skep and set down just where it alighted. No wiring in of foundation, cutting of quilts or interchanging of sites and frames of brood. In July, what? Nothing again, except a few belated casts. No tiering up, no preparation of sections.

And in August, again? Nothing. No removal of racks and storing of sections; no extracting; no readjustment of frames for autumn brood-raising; no constant care of nuclei. And in September, when the harvest is over and a little well-earned leisure comes to the toilers, where is the autumn feeding, the constant watchful care to avoid robbing? Nothing is left for the skeppist but the sulphur pit and a large dish for the comb.

It is really too absurd altogether, and the truth is that the farmer, wise man, realises that bee-keeping is no longer a useful extra which gives very little trouble, but a scientific, elaborate business which needs the attention of the enthusiastic specialist, and so he leaves it alone.

Why? Is not the very foundation of our troubles the man who thinks bees in frame hives need no more attention than those in skeps? Who leaves a huge brood-chamber and even a section rack on the hives from year to year; whose queens never come out after they are mated, but live on until they are so effete that they perish with the whole of their children?

No, it will never do. I am no champion of straw skeps, but I do say that straw skeps, managed as straw skeps should be managed, were not the hotbeds of disease that frame hives mismanaged are. Have I not stumbled on a rock-bottom truth here? It is not the system which is at fault, whether it be skeps or frames, but the abuse and the mismanagement which here, as in every other walk of life, are only too rife, that is the cause of all our troubles.

The weather, though mended somewhat, is yet far from ideal for bees in this part of the country. The apples are blooming bravely, but the throng that should be pouring from the hives into them is waiting for sunshine. But we must live in hope.—Herbert Mace, Kimbolton.

NOT ENTOMOLOGICAL BUT ETYMOLOGICAL

8718] Little did I think when I ventured to point out to Mr. Smallwood that he was mistaken in his conclusions, and attempting to read into one word a meaning that it did not and could not bear, while denying to another that to which it was legitimately entitled, what an avalanche of quotations I should bring down upon the BEE JOURNAL and my own devoted head. I am, therefore, almost frightened at my temerity in asking the Editor to print yet more; but as he has seen fit to print these of Mr. Smallwood's, perhaps he will, of his graciousness, extend the same courtesy to me, and open his columns to what shall be, on my part, a final word in the controversy.

Mr. Smallwood runs a tilt with gusto, and wields his weapons with knightly grace and skill; but although, as the challenged party, he undoubtedly had the right to the choice of arms, I am quite at a loss to understand why he should select a boomerang for his first essay. He does so, however, and the result is such as the employment of a weapon so unfamiliar to knightly hands might be expected to produce. His quotation from "Piers Ploughman" (page 166) is excellent—from my point of view. That the rupture of the wall was vertical and *transverse*, and not horizontal and *longitudinal* is surely too obvious to need pointing out. So well does this support my case that I will draw attention to an instance of a similar use of "cleave" by Chaucer.

Upon that o syde of the wal stood he,
And on that other syde stood Tisbe.
And every day this wal they wolde threte,
And wisshe to God, that it was doun y-bete.
Thus wolde they seyn—"allas! thou wikked wal,
Through thyn envye thou us lettest al!
Why nilt thou cleve, or fallen al a-two?"
Legend of Good Women, 1, 750.

Pyramus and Thisbe desire that a breach may be made in the wall to enable them to come together. A lengthwise division would hardly have effected this. Milton also uses the word to express a transverse parting. Alluding to a possible return of the ten tribes from Assyrian exile, he says that the Deity

May bring them back repentant and sincere,
And at their passing cleave the Assyrian flood,
As the Red Sea and Jordan once he cleft,
When to the Promis'd Land their fathers passed.
Paradise Regained III., 435.

But my antagonist in the lists "cannot imagine it to mean transversely," and contradistinguishes between "cleavage" and "incision." Now it is rather unfortunate for him that he has done this, for it so happens that "cleave" can, and sometimes does, bear the meaning of to "cut into."

And now with a quotation from Spencer, I will take my leave of "cleave."

Inflam'd with wrath, his raging blade he heft,
And strooke so strongly that the knotty string
Of his huge taile he quite a sunder cleft;
Five joints thereof he hewd, and but the stump
him left.
Faery Queene, c. xi., st. 39.

How's that! Mr. Smallwood, for a "longitudinal division"?

Mr. Smallwood's thesis is that to "cleave" means to "divide in a longitudinal direction," and that its use in any other connection is abnormal and irregular; and this, I submit, he has failed to establish, while I have postulated that it means to divide in any direction, without any restriction, or necessarily any indication as to the direction that the line of division shall take. And I think that I may leave it to the readers of the "B.B.J." to decide as to whose side the weight of evidence inclines.

In reference to our other difference of opinion in regard to "plight," Mr. Smallwood expresses regret that I did not dig a little deeper into the matter, and disentangle the skein by showing that A.S. *plihtan* is itself derived from A.S. *pleon*. I quite fail to see how this would have disentangled any skein, certainly not such an one as Mr. Smallwood gets himself involved in when he derives "plite," a word of Romance origin, from an A.S. verb. But he is in general quite at sea in the matter of his derivations. "Plight" (plite) is not fr. F. *plier*, but fr. Anglo-F. *plit* fr. O.F. *ploit*, a fold or gather, and ultimately fr. L. *plico*— not *plecto*, as Mr. Smallwood would have it. All the etymological authorities—Skeat, Murray, March, Brachet, &c.—are, with one exception, opposed to this view. Dr. Mahn is the only one who champions Mr. Smallwood's contention, and he is not very firm in his stirrups, for he qualifies his statement with "probably."

There are weighty reasons why Mahn's derivation should not be accepted. The Latin cognate of πλέκω is *plico*, and *plecto* is a derivative from the same stem (as the lengthened form of the stem shows) with a somewhat modified meaning and rare occurrence in the Latin tongue, and then occurring chiefly as part. *perf. plexus*. Words derived from *plecto* were rescued at, or subsequently to, the Revival of Learning from the mausoleum of the volume's roll, and have reached us practically unchanged, and with their origin plainly showing; e.g., complex, perplex, complexion. Far different has been the history of the *plico* derivatives. Sprung from a word in common use among the people, they have been handed down from mouth to mouth from one generation to another, living words on human lips, exemplifying in all the vicissitudes of their course from classical times all through the long dark Middle Ages down to the present day, that

change which is the law of life; ever casting off the old and taking on the new, and adapting themselves to new uses as new thoughts arose and new ideas presented themselves to the minds of men. Of this "plight" (plite) with its variants and cognates form an admirable illustration. The appeal to Virgil is ingenious, but avails its author nothing. Virgil's use of *plicans* indicates that the snake was twisting itself into convolutions, not that it formed itself into a ring, which it could do only by sticking its tail into its mouth —very ill behaviour, such as no well-bred and self-respecting snake would be guilty of.

And now there comes for Mr. Smallwood "the most unkindest cut of all," in very truth a blow on his (solar) "plexus." But first an apology is due from me to Hyll in that I accused him of misspelling. The misspelling is Mr. Smallwood's, or perhaps I ought to say his who was responsible for the edition of Hyll, "imprinted at London, Anno 1579," from which Mr. Smallwood quotes. Hyll's book first appeared in 1574, and he there writes "Aristotle nameth them *pleighted* or ringed in that their bodies are diuided into *pleightes* or rings." The italics are mine. This is the same word as we now write "plait," and Hyll's orthography is the orthography of his day. Its meaning is absolutely beyond dispute—it means, of course, a flattened fold or gather made by doubling the material upon itself—and seems to have been in common use, in the 16th and 17th centuries, to denote a fold in the integument or membranes of insects.

Purchas, "Theatre of Political Flying Insects," uses the same word and phrase. "The hinder part of their bodies is full of rings or pleights." It is in nowise connected with "ring" or with "plight" in the phrase "I plight thee my troth," used in the marriage service, and Mr. Smallwood's notion that it is, is I submit a mistaken one.

But I must congratulate Mr. Smallwood upon the gallant fight he has made with very inferior arms, and bestriding so unmanageable a destrier. And I hope that my remarks may have convinced him that in regard to both "cleave" and "plight" has he been in error. Should, however, the contrary be the case, then—though much regretting that upon such a doughty champion so untoward a fate should fall—I can but leave him "dismounted on the Aleian field . . . . erroneous there to wander and forlorn."

And my apology to the readers of the "B.B.J." for inflicting upon them a philological controversy better suited to "Notes and Queries," and inundating the columns of their JOURNAL with a deluge of quotations from standard authors of all periods of English literature, must be made in the following lines of Lucretius.

Floriferis ut apes in saltibus omnia libant,
Omnia nos itidem depascimur aurea dicta.

"Ev'n as the bee in flowery meads from every blossom sips,
So we draw life from every word that falls from golden lips."

C. HANSLOPE BOCOCK.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

How does a Bee Find Nectar (p. 151).—Many of our difficulties in reasoning out the powers of smaller creatures are subjective. That is to say, we sometimes think of bees as possessed of our powers as miniature humans, and we are hampered by our own limitations in that we may fail to realise how any one of their senses may be specialised. That these special powers must exist is apparent when we consider how inferior life depends upon them. For instance, we might listen a long time before seizing the reluctant worm in his tunnel with the unerring swiftness of the thrush. But if our life depended upon a "diet of worms" obtained in this way, we should soon speed up, and there can be little doubt that the bee's power of smell is so developed as to detect minute quantities of nectar. This does not mean to assert that the bee is solely dependent upon smell or that it makes no fruitless journeys. A recently robbed flower may possess scent without nectar, and the bee, like other creatures, may form habits, and, to be subjective, may even, for ought that I know to the contrary, be absent-minded when apparently most busy. There is that bit of comb to be built; wherever is the accumulating pollen to be stored and what about queen-cells? Who knows? But we may be fairly sure that the bee can scent out much smaller quantities of nectar than we, although we easily recognise the scent in bulk, say before the hives in the evening of a good honey day. Probably the wild bees detect by smell the position of the nectary opening within the corolla, and thus perforate at the exactly right spot.

Water in Spring (p. 155).—"D. M. M.," please! What exactly do you mean by "running heated water off in such a way that the cold is carried away and only the lukewarm left?" Please explain. By the way, have you forgotten the dodge of fixing a pail in the top of a hot-bed?

A Matter of Form (p. 159, line three).—It is so seldom nowadays that I suffer at the hands of the compositor that I hardly dare to mention a trifling error lest reprisal should ensue! But by some mistake in the "form," I am twice made to say

"from," which does not make sense. My wretched writing again, I expect!

Artificial Stores for Winter (p. 165).—The facts mentioned by "H. W." appear to answer a writer who some time ago attributed to drugs all the ills that bee flesh is heir to. Those who are still troubled with "Isle of Wight" disease would do well to note. But "H. W." does not say which of the seven drugs was most effective. Herein lies the point, and this would have given considerable value to what is otherwise an interesting recital.

J. L. Byer, a well-known American beeman, favours natural stores for winter, but the weight of opinion in his country is against him. Answering him, the Editor of *Gleanings* advocates hard candy instead of the soft candy so well-known here. This hard candy appears to be boiled to such a point that it will set without stirring, forming a clear and hard cake. I venture to think that it cannot be appropriated so quickly as the soft candy which we use. This spring several of my stocks took down and stored 6lbs. of soft candy in about a fortnight. I have had driven bees, hived in September, winter perfectly on medicated syrup, supplemented by a cake of candy. These were hived on combs containing pollen, and fed up rapidly with carefully made thick syrup.

Candied Honey in Combs (p. 169).—It seems a pity to destroy good combs solely for this fault. Something depends on the nature of the candying. If the honey has a smooth grain, the bees would probably remove it easily. But this is seldom the case, it being more usual to find partial or coarse granulation. The bees will remove the fluid and the granule can be shaken out. But a little warm water syringed into the cells will do all that is wanted. May I suggest that this be tried before destroying the combs if they are really worth saving. Of course, if the honey is wanted for table there is no alternative, but its quality will suffer severely in the process of rendering.

Bee Shows to Come.

June 10 to 13, at Windsor.—Honey Show of the Berkshire Bee-Keepers' Association, in connection with the "Royal Counties" Show. Liberal prizes. Schedules from D. W. Bishop Ackerman, 161, King's-road, Reading. **Entries closed.**

June 11 and 12, at Braintree.—The Essex B.K.A. Annual Show, in connection with the Agricultural Society's Show. Open classes. Mr. W. Herrod will judge exhibits, and lecture in Bee Tent both days of show. Schedules from Mr. T. E. Lennox-Brown, Eagle House, Little Coggeshall, Essex. **Entries close May 31.**

June 25, at Richmond, Surrey.—Honey Show, in connection with the Richmond Horticultural Society's Annual Flower Show, in the Old Deer Park, Richmond. Open classes for amateurs. Special prizes for Honey and Wax. Apply to W. Cook, Hon. Sec., Holmesley House, Sheen-road, Richmond.

July 1 to 5, at Bristol.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

July 17 and 18, at Lincoln.—Lincolnshire Agricultural Society's Show. Honey section, under the management of Lincs. Bee-keepers' Association. Prizes value £30. Open classes for Appliances, Observatory Hives, Extracted Honey, and Sections. Schedules from J. H. Hadfield, hon. sec., Alford, Lincs. **Entries close June 14.**

July 23, 24, and 25, at York.—Show of Hives, Honey, &c., in connection with the Yorkshire Agricultural Society's Show. Liberal prize list. Schedules and particulars from J. Maughan, secretary, Blake-street, York.

Notices to Correspondents.

C. R. J. (Fleet).—*Queen Mating.*—Yes, mating has been accomplished, and the queen is now fertilized.

F. Cope (Macclesfield).—*Queen taking Flight.*—It would not be the old queen you saw, as the bees, when superseding her, would kill her by "balling." It may have been a virgin taking her wedding flight.

T. W. D. (Hersham).—*Old Foundation.*—The foundation can be made fit for use by warming each sheet in front of the fire.

Lemco (Leamington Spa).—*Working for both Increase and Surplus.*—We are afraid you are expecting too much to try to increase two stocks to four, and get surplus as well. You could make a nucleus from each hive now: by careful nursing they will rear a queen and build into strong stocks for the winter. If you allow the bees to swarm naturally you could hive the swarm in a new hive on frames fitted with sheets of foundation on the old stand, put the supers on the swarms and allow the parent colonies to rear queens and build up for the winter.

H. McK. (Belfast).—*Bees in Damp Location.*—(1) In a damp site you should not attempt to keep Italians. Blacks will be better. (2) Melt the moth-infested foundation down and start with fresh.

H. A. G. (Norwich).—*Joining Bee Association.*—There is no Norwich B.K.A. to our knowledge. The Hon. Sec. of the Norfolk B.K.A. is Dr. D. Wardleworth, St. Nicholas, Sheringham.

Dudley.—We note your complaint, but "be aisy," it would be just as possible to see that hum as for one "to put on a top hat and umbrella," see notes from the pen of your learned critic on the second page of the pamphlet you mention, or "to manipulate by scratching the cappings and putting them, one at a time, in the middle of the brood-nest," as advised on page 7 of the same issue. Refer to page 4 and you will find the

following:—"Hundreds were crawling along the floor and many were dead." Evidently this is a new variety of bee, for although dead, they walk, then follows the amazing statement that "The few remaining bees that remained alive were then killed together with those on the floor." We have read this all ways, including backwards and upside down, but fail to grasp its meaning, being still in doubt as to which were the "remaining bees that remained alive" to be killed after "crawling along the floor dead together with those on the floor." It reminds us very much of the old lady who said her son died an hour after he was killed. Your surmise is correct. We sift out the wheat, and the chaff of discontent, or fanaticism blows over the water, where it seems to be more acceptable, owing, no doubt, to the want of anything better. It is curious that the pamphlet appears incapable of procuring copy from natives of the country of its birth, but has to rely upon newspaper reports or cast goods from Great Britain. If you wish to get a report of your literary powers so eulogistic that even you will have a difficulty in believing it true, write a letter for publication, mentioning the P.B.G. in every other line, and adversely criticising the B.B.K.A.

Honey Sample.

S. R. WRIGHT (Amblecote).—The honey was crushed to pulp through insufficient packing. If you will send other samples and repeat the queries, we will help you.

Suspected Disease.

CUMBERLAND.—The bees were crushed out of all recognition. They should have been packed in a tin or wooden box.

F. R. N. (Surrey).—We cannot say. You had better write to the Secretary of the County B.K. Association, Mr. F. B. White, Marden House, Redhill.

W. D. (Nuneaton). The comb is affected with foul brood.

A. S. (Devon) and C. W. (Market Harboro').—The bees have died from "Isle of Wight" disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.
Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ¼*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

FOR SALE: few 6-frame nuclei, healthy brood in all combs, 21s. each; boxes allowed for if returned at once.—H. GRIST, Downside, Shepton Mallet. v 100

EXCHANGE pure bred chickens for foundation, frames, sections.—WM. BECK, Airton, Bell Busk, Leeds. v 6

FOR SALE, drone base combs, wired and drawn out, eight combs, including crate, 5s., perfectly clean.—TODD, 2 Springfield Cottages, Saffron Walden. v 95

SALE, 60s., or exchange for bees, pedigree Airedale dog, demon watch, very large, good companion, quiet children, 18 months.—BELL, Crathorne, South Bank, Yorks. v 96

GIVING UP, cheap clearance of appliances.—51, Lower Mortlake-rd, Richmond, Surrey. v 92

FOR SALE, stocks of bees, guaranteed healthy, on eight frames, 1912 queens, free on rail, £1 1s. each; travelling box to be returned.—JOSEPH ROWLAND, Holbrook, Derby. v 97

BEES and appliances for sale, Abergavenny. W.B.C. hives.—Apply, in first instance, to SMITH, Cairntons, Highfield, Rhyl. v 96

WANTED, Simmons' Double Conqueror hive, good condition; on approval.—B. T., c/o "B.B.J.", 23, Bedford-street, London. v 99

FAMOUS WILLOW HERB, nine plants, 7d.; three feeders, 1s. 6d.—BOWEN, Coronation, Cheltenham. v 1

CAN book prime, healthy, natural swarms, 15s. each, carriage forward.—BUTTON, Hickman's Court, Newnham, Glos. v 5

DOUBLE, single supers, appliances, cheap; state requirements.—HULBERT, Hermitage, Worcester. v 4

HEALTHY SWARMS, early June, 15s., box free; orders booked in rotation.—E. LANG, New-road, off Yarrow-road, Chorley, Lancashire. v 93

FOR SALE, twelve modern hives, in first-rate condition, the whole or part can be taken; can be seen at any time; no reasonable offer refused, owner leaving district.—G. K., Wood View, Hempstead-road, Watford. v 3

HONEY, granulated, in 1lb. metal capped jars, 9s. doz.—SHEAVYN, Atherstone. v 2

EXCHANGE, Harmsworth Educator, bound, complete for bees or appliances.—32, Chamber's-lane, Willesden. v 98

THREE strong stocks, in W.B.C. hives, and one small lot in hive, quantity of supers, excluders, dividers, sections, foundation, feeders, &c., &c., for immediate disposal; can be inspected any time.—BRADBURY, Church House, Oppidans-road, Primrose Hill, N.W. v 94

APIARY FOR SALE, lease terminating.—Seven colonies, fourteen hives, and complete outfit, Sladen's British Goldens and Blacks, all young queens, perfectly healthy; purchaser must remove.—YETTS, The Wood, Maybury, Woking. v 78

VACANCY FOR PUPIL on bee and poultry farm, including day old chick business, good home.—No. 73, "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 93

OUTDOOR CHRYSANTHEMUMS, strong plants, named, carriage paid 2s. dozen.—MOIR, Calderbridge, Cumberland. v 65

SITUATION WANTED by second class expert, business experience, good carpenter, painter, fair mechanic microscopist, &c., good references.—W. H. W., c/o "B.B.J." Office, 23, Bedford-street, Strand, W.C.

FOR SALE, lady's bicycle, good condition, 35s.; small sack truck, 7s. 6d.; fifty bags malt-culms for poultry, 3s. bag; exchange healthy swarms.—156, Moston-lane, Manchester. v 72

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held at 23, Bedford Street, Strand, London, W.C., on Thursday, May 15th, 1913. Mr. W. F. Reid presided. There were also present: Miss M. L. Gayton, Messrs. C. L. M. Eales, J. Smallwood, E. Watson, O. R. Frankenstein, E. Walker, H. P. Perkins, J. B. Lamb, R. H. Attenborough, A. Richards, Association Representatives G. J. Flashman (Barnet), D. Seamer (Lincolnshire), G. R. Alder and G. S. Faunch (Essex), G. W. Judge and G. Bryden (Crayford), and the Secretary, W. Herrod.

Letters expressing regret at inability to attend were read from Miss Sillar, Messrs. T. W. Cowan, T. Bevan, Captain Sitwell, Sir Ernest Spencer, and General Sir Stanley Edwardes.

The minutes of the Council meeting, held April 17th, 1913, were read and confirmed.

The following new members were elected: Dr. T. S. Short, Rev. C. P. S. Clarke, Mr. G. M. Ellison, Mr. J. W. Tauranac, Mr. H. Richardson, Mr. E. H. Collins, Mr. J. Pratley, Mr. H. J. Whistler, and Mr. J. J. Brown.

The South Staffordshire and District Association applied for affiliation, and were accepted.

The following nominations of representatives from affiliated Associations were received and accepted:- (St. Albans) Mr. F. W. Harper, (Shropshire) Rev. G. E. H. Pratt, (Derbyshire) Mr. R. Giles, (Yorkshire) Rev. F. S. F. Jannings.

The report of the Finance Committee was presented by Mr. Smallwood. The payments into the bank for April amounted to £38 12s. 9d., the balance at the bank at the end of the month being £149 2s. 4d. Payments amounting to £8 18s. 6d. were recommended.

Examinations for preliminary examinations were sanctioned for Glamorganshire, Essex, and Swanley.

A report from the Development Fund Committee was read and accepted.

Next meeting of Council, June 19th, at 23, Bedford Street, Strand, London, W.C.

ROYAL SHOW AT BRISTOL.

Intending exhibitors should note that the date, May 31st, for closing entries for the above show is rapidly drawing near. In view of the late spring and consequent scarcity of this season's honey, it is hoped that all bee-keepers fortunate enough to have secured early sections or extracted honey will make a point of entering the competitions. Others having good samples left from last season can also assist in making the show a success by staging exhibits in the classes for such honey. Schedules can be had from the Secretary, B.B.K.A., 23, Bedford Street, Strand, London. Write to-day for one, and if, after entering, you cannot stage an exhibit, the fees will be returned.

HONEY SHOW AT CAPE TOWN, SOUTH AFRICA.

The Cape Town Agricultural Show was held in the suburban part of the town during the last four days of February, when a record number of entries in the Honey Section were on exhibition.

The Western Province B.K.A., which is affiliated with the British Bee-Keepers' Association through the South African organisation, had practically control of the honey department.

The stands were tastefully decorated with white and golden art muslin, finished off with green ribbon; interspersed amongst the exhibits were vases of flowers which enhanced the appearance of the honey considerably and attracted much attention.

The following awards were made by the judge, Mr. H. A. Attridge:—

Sections.—1st and 2nd, W. J. Hugh Wilson and Son; 3rd, Miss A. E. Pullinger.

Honey in Jars.—1st, L. L. W. Hardwick; 2nd, Miss A. E. Pullinger; 3rd, J. G. Brand.

Display of Comb and Extracted Honey.—1st, Miss A. E. Pullinger.

Beeswax.—1st, Miss A. E. Pullinger; 2nd, J. G. Brand; 3rd, W. J. Hugh Wilson and Son.

Mr. Attridge reported the honey exhibit was considerably larger than last year, and the judging somewhat difficult owing to the keen competition; the exhibitors are to be congratulated on the improvement in appearance and general "get up."

It is gratifying to note that with the inauguration of bee-keepers' associations, greater interest is being evinced in apiculture. A few years ago modern apiaries were few and far between, and to see honey presented for sale and even for competition in a most hap-hazard manner, was more the rule than the exception. All this, however, is in the past, and as each season opens up, there is quite a fair number of enthusiasts joining the ranks of modern bee-keepers.

Lectures and demonstrations from the bee tent were conducted each day of the show in the grounds; these were well attended and followed with keen interest. In addition to these, a lantern lecture was organised by the local Bee-keepers' Association and held during the show week in Cape Town; slides of English and American apiaries, also of the leading

apiarists, were shown, together with others illustrating South African bee-keeping, resulting in the spending of a very pleasant and profitable evening.—L. L. W. Hardwick, Hon. Sec.

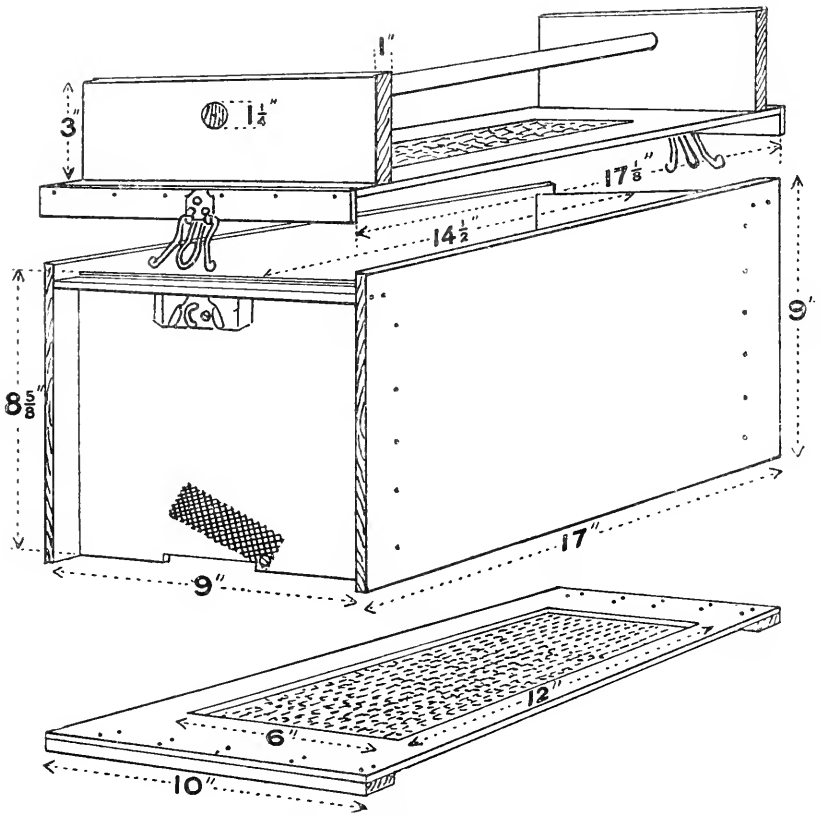
HELPFUL HINTS FOR NOVICES.

By W. Herrod.

PACKING BEES FOR TRAVELLING.

One of the operations which is troublesome to the novice is the packing of bees for transit. Each year the lives of a large number of bees are sacrificed through ignorance of the manner in which this should be done. I hope, therefore, that these few hints will be the means of saving many bees from destruction at a period when they are very valuable.

Although bees live in dense clusters in the hive, and at a temperature of about 98degs. Fahr., yet they are able to obtain as much fresh air as they desire by fanning at the entrance, also a fairly even temperature is maintained, as they are free from excitement. When packed for travelling either as a colony, nucleus, or a swarm, all this is altered. In such cases the bees are full of food, and become excited if confined under these conditions without proper ventilation. In warm weather they will be killed by suffocation. This takes place in a curious manner. The bee breathes through little holes, called spiracles, at the side of the joints of the segments in the abdomen and thorax. The body of the bee is covered with a large number of hairs; therefore, if confined in a small space with very little or no air available, the bees become sick and disgorge the honey from their sacs, the honey plasters down the hairs over the spiracles and prevents the bee from breathing. This accounts for the wet and sticky condition of bees which die in transit through being packed improperly. Honey will often drain away from the receptacles they are in, although there are no combs with them.



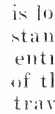
TRAVELLING BOX FOR BEES.

In packing swarms too much ventilation cannot be given, and if the receptacle could be made entirely of perforated zinc so much the better, but with a colony or nucleus the conditions are different, as there is brood in the combs which must be kept warm. A multiplication of appliances, especially where room and money is limited, is a nuisance, therefore I give

details of a box that will be suitable for the transit of either a swarm or a nucleus on six combs.

The material should not be too heavy, as the weight of the box is counted in with the bees when the charge for carriage is being made; ½in. material will be quite strong enough.

The body of the box is made first, and for this purpose we require two pieces of wood 17in. long and 9in. wide, two pieces 9in. long and 8⅝in. wide, one edge of each of the shortest boards is bevelled off to ½in. to form the runner for the frames, and for the rebate ¾in. wide is nailed from the top, so that the cross section appears thus. The boards are now nailed together with the short ends inside, and standing back ⅜in., as shown in the drawing. A small hole about 2in. long and ⅜in. deep is cut to form an entrance, and over this a piece of perforated zinc is fastened by means of two screws, one of which is never taken out but forms a hinge. The bottom of the box consists of a framework as shown: two pieces of wood 17in. long and 2in. wide are first nailed on to the ledges, shown in the drawing, and two cross pieces 6in. long and 2½in. wide fitted in at each end, make up the framework, which is covered with perforated zinc, having holes $\frac{3}{16}$in. diameter, the ledges across the bottom hold it clear from the ground, thus allowing air to pass freely into the box. This is then nailed, or, better still, screwed with brass screws in position. The lid is made in the same way, but is ½in. longer to allow it to be put on and taken off without catching the ends of the frames, the difference being that the cross ledges, 3in. wide and 1in. thick, are nailed edgewise, so as to allow of a round piece of wood being inserted to form a handle; this is obtained by cutting up a broom-handle. These ledges also prevent other parcels being put flat on to the zinc when travelling. Across the ends are nailed strips of wood 1½in. wide and ½in. thick, so that the frames are held in position, and the bees prevented from escaping. The zinc should be nailed on the outside of the box. A block of wood screwed on the under side of the rebate ledge enables a universal fastener to be put on. This is much better than using screws, as the holes soon become galled by constantly screwing in and taking them out.



It is really better to make the box 9⅞in. wide, so that when packing bees on combs a slip of wood ⅜in. thick, ⅞in. wide, and 16in. long can be put between each top bar. This gives the bees more room to cluster when travelling, and at the same time keeps the frames rigid. When bees on combs are to be put in the box the work should be done in the daytime, the zinc at the bottom being covered with a board, and after the bees are put in, the lid fastened, and a sack thrown over the top to keep all dark, the bees will settle down, and the zinc at the entrance can be shut down at night, so that not a single bee is lost. Of course the box is placed on the stand that the bees occupied, and with the entrance as nearly as possible in the position of the one the bees have been using. When travelling in cold weather a board should be fitted over the bottom zinc, as the ventilation in the lid will be ample.

Swarms are just put into the box and travel without combs. To get the swarm in, one of two methods can be adopted. The bees can be hived into a skep and allowed to stay until dusk, when they will be sluggish, and all hang together; remove the lid, turn the skep upside down, and bump it on the ground sharply to dislodge the bees; they can then be shot in a mass into the box, and the lid put on quickly. The other method is to run them in, as is done into a hive. Loosen the screws at one end of the bottom and wedge it open about ½in., the lid is fastened, and a sack thrown over to make the box dark, or the bees will not enter; put down a sheet, and throw the bees on to it, when they will travel into the box just as readily as into a hive. It is better to make an inclined plane for them to travel up by using a tilted board to stand the box on. At night the wedges can be removed and the bottom screwed up again.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

WIRING IN FOUNDATION.

[8719] The bee-man is nothing if not forehanded, and he blesses his stars for cool weather when the time comes for wiring frames and fixing foundations. It is a misery to handle the sheets when they melt at a touch, and a joy to have them tough enough to stand a little firm manipulation. I wonder whether mine is the most pleasant method of wiring. I loosely fix the uprights in the top-bar, having, of course, first bored the former. Then I thread the wire through the holes and fasten the beginning and the end so that all is fairly tight, with the uprights a little out of plumb. Then comes the joy of forcing them straight to let in the bottom bar, and of hammering the parts together to a merry hum of perfectly tight

wires. A very little practice tells you just how much tightening-up to leave to the last operation. In fact, if you cut the wires all one length, and use the same lengths for each fastening-off you cannot go wrong. Try it.—G. G. DESMOND, Sheepscombe, Glos.

A SWARM WORTH HIVING.

[8720] Several swarms came off in this district on Friday and Saturday last (May 9th and 10th), all from frame hives. One of them was a beauty, weighing 6lbs. 3oz. net. I personally hived it, and as it was such a fine swarm I weighed it to be exact. It issued from a twelve-frame hive just after nine o'clock on Saturday morning, which was a lovely day after a long spell of wet weather, and clustered only a few yards from the parent stock, on a pæony bush, and was safely hived in the evening, but as it nearly filled a ten-frame hive I put on a rack of sections straight away.—W. J. WOOLLEY, Evesham.

"BLURTS FROM A SCRATCHY PEN."

REVIEW OF AN OLD BEE BOOK, CONTINUED.

[8721] I had *proposed* to select one or two other amusing and interesting examples from "The Right Ordering of Bees," but it was otherwise *disposed* for me, and for the moment I had to turn aside to explain wherefore I differed from those who could not see through my spectacles. Unwisely had I "pledged my troth" (mark the word) to our editor that the review should be continued, little considering that ere I could write again the soft spring would be with us, and with it the music of the hive, the blossom of the fruit making snowy white the orchards, and the gorgeous yellow of the meadows rich with buttercup and dandelion. Oh, how sublime is Nature's colouring in each and every season! Other colours tire the eye, but who can be fatigued with Nature? let it be, as now, when different shades of yellow and green chequer the land; or in the summer, when the poppy crimsons the corn; or in the autumn, when russet cornfields and blushing orchards proclaim the harvest. I too, with the advent of the season, must gather together my weapons, and commence my "bee hunting," as a malicious scoffer, has wickedly dubbed my expert work. Therefore, as I have said that my word must be kept, I must even write in the train as northwards it speeds me through the beautiful seed farms which line either side of the road to Oxford. If I have been enraptured by the beauty of the countryside, here, almost within touch, is something equally delightful. Broad bands of tulips and pansies, and flowers whose species I cannot discover as the train rushes on, each of a different colour, white and red, violet and crimson, blue and scarlet, ribbon the fields. I have some warm-natured travellers from the other side of the Channel in the same compartment; they are ecstasied. "Voila! mais c'est magnifique," and heartily do I agree with them.

But to come back to our "Right Ordering of Bees." Our author has solutions of many of the problems that occur in natural history which do not exactly chime in with our present-day views. For example, in the matter of the generation of bees, he says, "Firste the Bees procœde of Bees by the actual going together, after whiche they lay egges, sitting upon them as the hens do on their egs." Passing by the peculiar rules of orthography holding good in those times, according to which it was possible to have "egges" and "egs" in the same sentence, the information given us here is, as our American brethren would call it, an "eye opener." I do not propose to argue the point as to whether this rendering of the laws of increase and multiplying, so far as the bees are concerned, is correct or not. No doubt they had details on that point which we have not, and upon which they based their decision, but what I should like to know is exactly how many eggs a bee could possibly cover and hatch out. I am afraid I am not sufficiently skilled to calculate it, but will anyone else attempt?

And now "what manner of person the keeper of bees ought to be." Hyll has many wise suggestions, which may be summed up into cleanliness and sobriety, but in writing of their stinging he suggests that one should treat them (the bees) as children, "learning to entreate and please the Bees by a more gentle manner." A most commendable course of procedure if it were possible to carry it out, but it would take a man endowed with very much more patience than I possess, in the middle of the assault of a particularly vicious hive to behave "in a more gentle manner"; one feels rather more inclined to volubly and violently express one's wrath. Moreover, one is tempted to quote the advice often given to those good natured people who do not advocate capital punishment, "*Que messieurs les assassins commencent.*" Let the murderers begin first.

But every page in this old book has some quaint expression, some old world notion from which amusement can be extracted without, I hope, any want of charity to the compiler and copier.

My endeavours to amuse and interest others in our old literature has brought me into the position of the doughty champion who has to hold the field against all comers. I am attacked from two sides. First, Mr. Crawshaw accuses me of the

guilt of making puns. That *he*, the hardened sinner, notorious for his crimes in playing on the meaning of words, should accuse *me!* In sorrow, not in anger, I exclaim *Et tu, Brute.* But stay! Am I correct? The whole thing may be one of Mr. Crawshaw's jokes: a concrete pun of itself.

For my other assailant, Mr. Bocock, I had compiled such an avalanche of quotations, invincible, that, to again adopt the phrase of tournament, I must have hurled him from his war-horse, captured his arms and weapons, and rendered him a prisoner to be held at ransom. But our sternly practical editor interferes with the commonplace "This correspondence must now cease," for he reminds me that "it is not bee-business," although he graciously adds it is very interesting. Therefore I must even bow to his ruling, inexorable as Mede and Persian law. I salute my challenger. He has run right sturdily a knightly course. I lower my lance, I raise my vizor, and leave the lists, hoping that we may again meet in further fray.—Jno. Smallwood.

"ISLE OF WIGHT" DISEASE.

[8722] As a Hexham bee-keeper, may I be allowed a brief space in your valuable paper to reply to the request of "Northumberland Bee" (page 186) for a few particulars regarding the above disease. Hexham and district, I may say, has been hard hit with this worst of all bee diseases, many bee-keepers, including myself, having lost all their stocks. I had twenty, but now they are all dead, and I have made up my mind that I will not begin bee-keeping again until the Bee Diseases Bill is passed into law, when I hope to renew my acquaintance with the most fascinating of all hobbies. For twenty-five years I have been a bee-keeper, but have never seen anything like this. One resident of this town, whom I know, whose experience of bee-keeping extends over 61 years, avers that the "Isle of Wight" disease has never visited this district in all that long period.

Last spring, when I heard that the disease had appeared in the district I took the precaution to paint my hives out with Ayles' remedy, and when it did break out in the month of June, I dosed and drenched them with another remedy, but all to no purpose. Other bee-keepers here tell me they did the same thing, but it did not stop the bees from dying and others from being infected. I kept on repainting hives out and dosing with medicine and trying the open-air cure at the same time until March of this year, when the last of some splendid stocks died out. My own deliberate opinion is after this experience that to try and cure stocks affected with "Isle of Wight" disease is so much time, labour, and money wasted, and the affected bees become a positive danger to any healthy ones in the neighbourhood. The only sensible course to follow on the first outbreak is to destroy the contents of the hive at once, bees, quilts, combs, frames and honey all together, and scorch the insides of the hives with a painter's lamp. If "Northumberland Bee" lives anywhere near this district and pays us a visit he will find that the bee-keepers here will be most happy to give him all the information he may require.—H. J., Hexham.

A GOOD REPORT.

[8723] I have just returned from a visit to the bees in South Herefordshire, and am pleased to say my stocks are in very good condition considering the weather we have had this spring. Some of the colonies are covering ten frames with most of the combs solid with brood; these stocks have not been fed either in the autumn or spring. Those that wanted feeding are not quite so good, but there is a splendid bloom on the apple-trees, and if this fine, warm weather lasts, they ought to soon be at work in the supers. Trusting we shall all have a good crop of honey in 1913.—A. Firkins.

SCANDALOUS BEE-KEEPING.

[8724] On Saturday last I visited a village near Sandy, Beds., and on inquiring if there were any local bee-keepers, I was taken to an apiary of thirteen hives. I was given to understand that the bees died out last summer, but suffice it to say that a more disgraceful condition of things it would be impossible to imagine. The lifts were not even properly put on, and I noticed several maraunding bees using this means of ingress to the hives. I hesitate to think what the Association is doing, and should advise them to visit the apiary at once. But perhaps any means other than an Act of Parliament is useless in dealing with such individuals as the owner of the hives.—R. Attenborough.

NOTES FROM AN EXPERT ON TOUR.

[8725] This spring so far has not been a good one for the expert on tour, the cold and rainy weather making the visiting of bee-keepers and the examination of the stocks very precarious.

Notwithstanding the unfavourable season and being fairly well north, I have recently found several unusually strong stocks with drones in them fit for flight: this inclines me to think that a good bee season is at hand.

To-day (Whit-Sunday) is a lovely day.

and I am enjoying the sunshine by the side of Derwentwater, rightly named the Queen of the English Lakes. In the east, on the Helvellyn Range, can still be seen patches of snow; Mount Skiddaw in the north is quite free from cloud caps, while the snow-capped peak of Scafell in the south presents a lovely if contrasting picture when viewed from the water's edge.

I have just been amusing myself by reading some statements in a bee paper which some anonymous donor has been pestering me with lately. Certain underlined parts bear the name of a writer whose residence is very near the place of post-mark on the wrapper, therefore he is located, and his object in sending the papers easily understood by a delegate to the B.B.K.A. The statements referred to are very misleading, and as they concern the work of the B.B.K.A., I know personally that they are not only very misleading but untrue.

To refresh myself I take up the "B.B.J.," which has been forwarded to me from home, and I am delighted to see that the Secretary of the B.B.K.A. has very wisely repudiated these statements in this week's issue. I am proud of the fact that our esteemed "B.B.J." refrains from publishing correspondence that is not in any way beneficial to the bee-keeping fraternity, and that it is careful to inquire into statements made to ascertain their truth before publishing. To plagiarize a well-known paper's phrase: "If you see it in THE BRITISH BEE JOURNAL it is so."—J. PRICE, Keswick.

EARLY SWARMS.

[8726] I should like to report in BEE JOURNAL that I had a grand swarm, which issued about four o'clock in the afternoon, of May 1st, in spite of a heavy thunderstorm and a very wet morning.—A. G. CARPENTER, Wrecclesham, Surrey.

It may interest your readers to know that I had a 5lb. swarm from one of my hives last Sunday, May 11th.—W. T. MORRIS, Swindon.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Where Bees Pay.—The Secretary of the Victorian B.K.A. gives us a side-light on this feature of bee-keeping in last *Australasian Bee-keeper*. Ten tons is a fairly good average, and at £30 a ton that means £300—"not a bad thing," as he truly says. At times, however, the yield runs as high as fifty tons, and he records that "one man has secured upwards of sixty tons," "a record-breaking yield for one individual." That means, at above price, £1,800. I wonder why some of our apiarists do not emigrate there instead of rushing in their hundreds to apply for a moderately paid Canadian appointment, where the dollars would go into another man's pocket.

Hive Stands.—Here is an Australian's ideas of the best: "Writers lay stress on ventilation underneath the hive, but that is exactly where I don't want it. I use a hive stand and floor combined. It consists of a frame of ⅞in. redwood saturated with copper sulphate, and is the size of the hive, with a detachable sloping alighting-board. The hive floor is nailed on top of this. I rub the hive stand down till it fits tight all round, when there is virtually a dead air space under the hive floor." This is Mr. Benhne's form of stand. Others over there lay down two junks of wood, on which they rest the floor board. I think, however, a stand is viewed as a very important part of the hive in this country, and I like a neat substantial fabric.

A New Edition.—Last *Gleanings* informs us that the "A.B.C. and X.Y.Z. of Bee Culture is about to be issued very much enlarged. The new edition will contain 150 more pages than its predecessors, and will run into no less than 750; at $2, certainly a low price for a work containing approximately 600,000 words. The work has been most thoroughly revised by Mr. E. R. Root, aided by a large and efficient staff of practical men, each one at home in his own department. "Foul Brood" is an instance of how necessity and modern discovery compel enlargement. In the last edition the subject was dealt with in six pages; in the present it requires sixteen. The Botany of Apiculture receives sympathetic treatment from Mr. Lovell, and several of the leading men in the Bureau of Entomology, all experts in their own line, deal with special subjects. Dr. Miller is still to the front, and the other Miller, C.M., who handles so facile a pen, takes a prominent place. An editorial says: "it is new from cover to cover."

Pollination.—Mr. Root is distributing 600 colonies of bees all round his location in fruit orchards, "The fruit men *are asking us* to put bees on their ranches." The use of bees in greenhouses for fertilising the blooms has long been recognised as a necessity. The demand for cross-fertilisation of fruit trees in orchards is insistent. It is a good idea to distribute hives in this way in orchards during the spring, and then when fruit bloom is spent, to transfer them to fields of white clover or alsike. Messrs. Root think very highly of this last crop. Some remarkable statistics are given in an article on "Honey-

bees and Pollination" in *Gleanings*:—"In 3,081 tests made of pears fertilised with their own pollen only *six small pears* were produced, *i.e.*, one fruit out of 513 blossoms. In another case from 1,268 blossoms fertilised with their own pollen only five pears were produced, while with cross-fertilisation one fruit was yielded from, on the average, three blossoms. Another test, on apples this time, showed the fruit inferior in size and ill-shaped compared with the cross apples, and in one case the average weight of the seeds from cross-fertilised apples was forty-six times greater than from the self-fertilised fruit. Probably 99 per cent. of the transfer of pollen is done by insects, the bee being the chief transmitter. The hairy covering of the body and legs of the honey bees and their brushes and combs for gathering the pollen make their visits more efficient than those of any other insects."

Out Apiaries.—"These afford an extra chance for improvement of stock. The best colonies can be massed in the home apiary, or one of the out apiaries, and queens can be reared there with a better chance to meet the best drones. Then when the young queens are laying they can be distributed to the other apiaries. In the future I predict the out apiary will be much more favoured in this country than in the past."

Drifting Bees.—"There is no question in my mind but that in many cases queens have been condemned for poor qualities when the main cause was drifting bees. In a large yard, those in the centre will often be in poor condition, while the outside colonies will be strong. The way to prevent this is to keep the hives in groups or by some well-marked location." I have noted that disease follows the direction of the prevailing winds, no doubt from the drifting of home-coming foraging diseased bees, which carry the trouble with them into the hives hitherto immune.

Farmer Bee-keepers.—"I am in favour of farmers keeping bees. If a man has a few hives he does not run for the scythe the first bee he sees on the clover. He does not spray his fruit trees before the bloom is ready for it. He does not feel that bee-keepers are robbing his alfalfa field. He will not complain if a single bee buzzes round his horse. He does not think you are getting a living off his farm and paying no rental. By all means teach the farmer to keep bees, the world is large enough for us all." Both large and small farmers might do a lot more than they have been doing by engaging in this minor industry. I know small-holders who draw two rents from their surplus honey, a tempting sweet for family consumption, and a world of pleasure from tending their bees.

BRITISH HIVES IN SOUTH AFRICA.

We are pleased to see that Miss Sillar's remarks regarding British *v.* American appliances in South Africa has aroused discussion, and that her statements are well supported by bee-keepers there. It is also gratifying to learn that the use of the British standard frame and hive is being strongly advocated. In the *South African Bee Journal* of April, 1913, Mr. F. F. Lothian, Manager of the Waterford Apiary, says:—

"*Re* a standard frame for South Africa.—I quite agree with Mr. Hopkins. I think that there should certainly be a standard frame for South Africa, and I am very certain that we can't beat the British standard frame, nor the British hives—the 'W.B.C.,' for instance. This hive is well adapted for the country, and the fittings of same are good. I have tried American hives, as have also some of my brother bee-keepers down in these parts, and we find it simply will not do, the brood-nest is far too large, and it takes the bees all their time to fill the brood-nest alone, let alone the supers, with the consequence that the flow of nectar is over before the bees can get a start in the supers. At the same time, I quite believe that they are suitable for some parts of South Africa."

While an experimenter writes in the same issue:—

"British and American manuals of bee-keeping are useful as rough guides to South African apiarists, but the bees here act in a manner that upsets many of the accepted facts of recognised bee culture of older countries. In several parts of this vast country bee-keepers are experimenting in various ways, each having his own particular theory as to the best type of hive. Some pin their faith to the Danzenbaker, others to the Hoffmann but most to the British standard. It is only upon the results of these experiments that we shall reach the point of adopting a standard of our own, or rather a standard for South Africa, even if it be one that we borrow from elsewhere. I would like to make a plea for the ten-frame British standard, for it lacks no advantage that other types possess and embraces many that others do not. The size of the frame appeals to me as particularly right for the following reason: Each size of a fully drawn out brood-comb contains roughly three thousand cells, and the queen ovipositing at the rate of twice a minute, keeping it up day and night, would fill up one side each day—assuming she is a good and prolific queen. By the time the last frame is filled the brood of the first frame has just hatched or will hatch in the course of a few hours. This being the case she can go back to her starting point and com-

mence again. This system obviates the difficulty so often experienced by South African apiarists—that of having the bees pack honey in big quantities in the brood-chamber thereby cramping production of brood.

"In addition to this, the hive can be had either with single or double walls, according to climatic requirements.

"The writer has tried British, and Danzenbaker and Hoffmann, and while the former, if kept painted, is always waterproof, he has never met either of the latter which could claim this advantage unless covered in some way. The double-walled British is as easy to storify and to change the position of racks as any other, and though the cost may be slightly higher the advantages are in its favour."

A Johannesburg correspondent writing under the name of "Esap," gives his opinion on the various prices as follows:—

"Sir,—I do not know if I am in order in commenting upon the Natal contribution to the *Journal*, but there is a letter appearing in the March issue which may create a wrong impression.

"I refer to the last paragraph of Mr. Fuller's criticism of Miss Sillar's paper. The figure £2 5s. for a 'W.B.C.' hive, mentioned by Miss Sillar, is the Johannesburg price: the 16s. for a Danzenbaker, mentioned by Mr. Fuller, is the Natal price. Thus the comparison is not a fair one. The first-named hive is put together, complete, with two lifts and brood-chamber, two racks of sections with queen-excluder and quilts, three coats of white paint, plinths screwed on, standing on legs, wide overhanging oval top (asbestos covered), porch to entrance and entrance slides. The Danzenbaker as sold here is "brood-box and two half-storey," unpainted, body only put together, and no interior fittings, price 25s. The writer has both hives, and by comparison backs Miss Sillar's opinion that the 'W.B.C.' really is a marvel of cheapness. I agree with Mr. Fuller that the Danzenbaker hive bodies are made of fine timber, but in mine the floor-board and roof are made of ⅜in. wood, and both have shrunk abominably (though painted), the roof is double, but the floor is not. Mine, by the way, came from Natal, and had been used. The floor-boards had shrunk, leaving cracks a quarter of an inch wide at the joints. It is only fair to state, however, that the newer hives are made of first-class stuff and look as though they would stand anything.

"Does Miss Sillar paint her hives? Why, she lives for her bees. Paint! I am told that she whitewashes the door-step of each hive every morning."

Queries and Replies.

[8638] *Removing Bees from a Ventilator.*—(1) I am living here in a leased house, and have three hives which have been neglected for two years. I fancy I am doing the best to get them in good order, but I have no practical experience. Can any of your readers inform me of any modern bee-keeper near here? (2) There is also a colony of bees in the ventilator above my bedroom. It has been there for many years, about 30ft. from the ground; the thickness of the wall is 14in., and the hole about 9in. wide by 5in. deep. By removing the inside ventilator I have ascertained that it is a strong and healthy stock. The problem now is to get them into a hive. (3) I have one strong hive which I am told generally swarms this month; this has good supplies of honey, but owing to long neglect as far as I can see on first investigation (which was not easy), the comb is all built irregularly quite regardless of the frames, and forms a continuous mass in the lower part of the hive. I am quite convinced that this colony must be moved to a fresh hive, and propose working on the method described in Guide Book, pages 149 and 150, for transferring, but should I allow the hive to swarm first? It seems very strong and healthy. —G. M. E., Limerick.

Reply.—(1) We leave this reply to Irish readers. (2) The best plan will be to cut out the combs and tie them into frames straight away. If you do this towards evening all the bees will collect in the hive in which these frames containing the combs are placed, if it is put quite close to the ventilator. When all the bees have collected inside, close up the entrance with perforated zinc, lower the hive and take it two miles away, keeping it there for about a week. The bees will not go back such a distance to their old home. At the end of a week they can be brought home and put beside the other hives, when they will locate the new position. (3) Transfer as instructed in Guide Book at once; do not wait for the bees to swarm.

[8639] *Preventing Drone-rearing.*—I shall be glad if you will advise me what to do with my bees. I saw in March a small heap of bees' wings outside one hive. I made an examination and the bees seemed all right, and yesterday I transferred the bees to a clean hive and found only a very small patch of capped brood, and very few bees, only covering one side of two frames. Could you tell me if this is a normal state. The queen is about three years old. The weather has been cold and wet alternating with brilliant, sunny days.

(1) Had I better buy a new 1912 queen, or shall I let them alone? The combs seem almost empty of honey; there is none capped over. My other hives appear very busy and quite different from the three or four bees that fly in and out of this hive. (2) Can I prevent drone-rearing by squashing the frames together? Are drones the sign of a queen-cell being made, as my other hive has a lot of drones and workers always flying in and out?—M. J. S. T., Ingatestone.

REPLY.—(1) The colony is evidently not thriving as it should. The wings were those of bees which had died under normal conditions. We are afraid you will do little good with the colony, the fault evidently lies in the queen being too old. You had better unite them to the next weakest lot. (2) You can prevent drone-rearing by close spacing the frames, *i.e.*, draw every alternate metal-end to the end of the top bar, and then push all the frames close together. Drones are an indication that the bees realise it is the swarming season, but it does not necessarily follow that queens will be reared.

TRADE CATALOGUE RECEIVED.

The S. J. Baldwin Apiary, Bromley, Kent. Bee Farms, Bromley and Farnborough.—This old established firm again send out a very useful catalogue of 48 pages, which is replete with every appliance required by bee-keepers. Poultry-keepers, photographers, and others requiring portable buildings are also well catered for. The catalogue is well worth reading; it is sent post free upon application.

Bee Shows to Come.

June 10 to 13, at Windsor.—Honey Show of the Berkshire Bee-Keepers' Association, in connection with the "Royal Counties" Show. Liberal prizes. Schedules from D. W. Bishop Ackerman, 161, King's-road, Reading.

June 11 and 12, at Braintree.—The Essex B.K.A. Annual Show, in connection with the Agricultural Society's Show. Open classes. Mr. W. Herrod will judge exhibits, and lecture in Bee Tent both days of show. Schedules from Mr. T. E. Lennox-Brown, Eagle House, Little Coggeshall, Essex. **Entries close May 31.**

June 25, at Richmond, Surrey.—Honey Show, in connection with the Richmond Horticultural Society's Annual Flower Show, in the Old Deer Park, Richmond. Open classes for amateurs. Special prizes for Honey and Wax. Apply to W. Cook, Hon. Sec., Holmesley House, Sheen-road, Richmond.

July 1 to 5, at Bristol.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

July 17 and 18, at Lincoln.—Lincolnshire Agricultural Society's Show. Honey section, under the management of Lincs. Bee-keepers' Association. Prizes value £30. Open classes for Appliances, Observatory Hives, Extracted Honey, and Sections. Schedules from J. H. Hadfield, hon. sec., Alford, Lincs. **Entries close June 14.**

July 23 and 24, at Cardiff.—Glamorgan Bee-Keepers' Association, in connection with the Cardiff and County Horticultural Society's Show. Open classes for collection, sections, &c. Schedules from W. J. Wiltshire, Maindy School, Cardiff. **Entries close July 17th.**

July 23, 24, and 25, at York.—Show of Hives, Honey, &c., in connection with the Yorkshire Agricultural Society's Show. Liberal prize list. Schedules and particulars from J. Maughan, secretary, Blake-street, York.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

April, 1913

Rainfall, 3·04 in.	Minimum on grass, 22 on 13th.
Above average, 1·29 in.	Frosty nights, 4.
Heaviest fall, ·43 on 11th.	Mean maximum, 53·1.
Rain fell on 19 days.	Mean minimum, 39·7.
Sunshine, 133·4 hrs.	Mean temperature, 46·4.
Below aver., 46·8 hrs.	Above average, 0·2.
Brightest day, 20th. 10·6 hrs.	Maximum barometer, 30·111 on 13th.
Sunless days, 4.	Minimum barometer, 29·400 on 27th.
Maximum temperature, 65 on 29th.	
Minimum temperature, 27 on 13th.	

L. B. BIRKETT.

Notices to Correspondents.

C. L. (Holwell).—*Variety of Bees.*—All the bees are British. The queen is a very old one, and this is, no doubt, the cause of the colony dying out.

B. G. E. K. (Ilford).—*Super Combs from Diseased Hive.*—(1) It will be safer to melt down the combs for wax. (2) Spray with a 10 per cent. solution of formaldehyde.

H. H. (Orpington).—*Buying Bees.*—The best plan will be to get them from a reliable dealer (see our advertisement columns) who will give a guarantee that they are not from a disease infected district.

A. W. G. (Elham).—*Spring Food for Bees.*—(1) Syrup given in the spring should be thin; 10lbs. of sugar to 7 pints of water are the correct proportions. You should use a bottle and stage feeder, giving access to about two holes, or you could give ¼ pint of syrup every two days. (2) There is no Association or expert touring in your district to our knowledge.

A. W. B. (Buckhurst Hill).—*Preventing Drone-rearing.*—You can close-space the frames. See reply to M. J. S. T., above.

SCEPTICAL (Newcastle). — *Anonymous Letters.*—You are right, we have too much sense of honour, and are far too busy to trouble about such matters. Also, there is more than one Luton and Sutton in Great Britain. The act has either been done at the instigation of interested parties to serve their own ends, or exists only in the

imagination of the writer, who has evidently "kissed the blarney stone." At any rate, we should have been cute enough to have posted out of our residential town.

R. D. (Essex).—*Mouldy Combs.*—As it would give the bees a lot of unnecessary work and the mould would in all probability taint the honey, we should advise you to melt them down for wax.

R. REID (Lincoln).—*Appendage on Bee's Head.*—There is no disease, the attachment which you notice on the bees' heads are the masses of pollen called pollinia of the flower *Orchis masculo*, now blooming freely in many places. A full description of this interesting phenomenon was given in "B.B.J." of June 30th, 1904.

H. E. (Kidderminster).—*Using Naphthaline.*—(1) The naphthaline balls should be placed inside the brood-chamber. (2) The secretary of the Worcestershire B.K.A. is Mr. J. P. Phillips, Spetchley, Worcester.

Suspected Disease.

C. S. (Wattisfield).—The comb shows odourless foul brood. If you keep on using the Apicure it will cure the stock. The sugar you have been using has nothing to do with the disease.

E. J. L. (Llwyngwril).—The two lots of bees were mixed up in the box. Some of them show signs of "Isle of Wight" disease. It is impossible from the meagre details you give to say why the queen left the hive. If you had been manipulating it is quite possible you dropped her.

G. H. D. J. (Bury St. Edmunds), N. St. J. W. (Aylesbury), and J. C. (Ludlow).—The bees have died of "Isle of Wight" disease.

T. P. (Ipswich).—It is odourless foul brood. Certainly Apicure will cure it.

T. H. (Fareham).—(1) The bees are badly affected with "Isle of Wight" disease. (2) No cure has been found as yet.

E. H. M. (Sydenham).—We do not find "Isle of Wight" disease, but the bees are gorged with either nectar or syrup.

COTTAGER (Tonbridge).—The disease varies so much that it is impossible to say.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½*in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

HEALTHY STRONG STOCK, in W.B.C. hive, 35s.; 1½ dozen drawn out shallow frames, 17s. 6d.; lot, £2 10s.—RUMNEY, Preston Brook, Cheshire. v 16

SWARMS, perfectly healthy, 12s. 6d., on rail.—MRS. BYLES, Redenham, Andover. v 18

5 CWT. LIGHT CLOVER HONEY, in 56lb. tins, 59s.; sample, 2d.—COOK, Torwood, Ashford, Middlesex. v 59

BLACK LEGHORN CHICKENS, from typical healthy stock, bred by selection for prolific laying twelve years, 6s. per dozen; with reliable hen, 2s. 6d. extra; live delivery and strong chickens guaranteed.—A. SHARP, Halstead Farm, Barrowford, Lancashire. v 15

THREE superb, prolific black Queens, 1912, 3s. before middle of June, disease in apiary unknown.—JAMES AITKEN, Carmichael Schoolhouse, Thankerton. v 14

WHAT OFFERS? Eight dozen 1lb. screw top bottles granulated honey, 1st prizes at Warminster and Bradley.—MATTHEWS, 23, Kingston Deverill, Bath. v 11

ONE fertile 1912 Italian Queen, 4s. 6d.—G. HALL, JUN., Borough, Hinckley, Leics. v 9

TO LET, successful poultry and bee farm, of three acres good cottage, fresh land, and good bee district, rent £21, nearly covered by fruit; particulars.—"LEICESTERSHIRE," 23, Bedford-street, Strand London. v 7

BARGAIN, two stocks English bees, W.B.C. hives, spare Colonial hive, accessories and appliances, guaranteed healthy, £5, or offer.—SALMON, Birch Hall, Kirby-le-Soken, Essex. v 8

GOOD pen White Orpingtons, 5 pullets, and massive cockerel, must sell to make room for chickens, 25s.; also good pen White Wyandottes, or exchange for bees.—AVERY, Deverill, Warminster. v 10

FOR SALE, eight W.B.C. hives, complete, new 1911, painted three coats, calico covered roof, 12s. 6d. each, £4 10s. the lot.—S. MATTHEWS, Station-road, Port Talbot. v 17

BEES and appliances for sale, Abergavenny, W.B.C. hives.—Apply, in first instance, to SMITH, Cairntons, Highfield, Rhyl. v 96

FAMOUS WILLOW HERB, nine plants, 7d.; three feeders, 1s. 6d.—BOWEN, Coronation, Cheltenham. v 1

CONQUEROR HIVES.—Double, single, supers, appliances, cheap; state requirements.—HULBERT, Hermitage, Worcester. v 4

HEALTHY SWARMS, early June, 15s., box free; orders booked in rotation.—E. LANG, New-road, off Yarrow-road, Chorley, Lancashire. v 93

APIARY FOR SALE, lease terminating.—Seven colonies, fourteen hives, and complete outfit, Sladen's British Goldens and Blacks, all young queens, perfectly healthy; purchaser must remove.—YETTS, The Wood, Maybury, Woking. v 78

VACANCY FOR PUPIL on bee and poultry farm, including day old chick business, good home.—No. 75, "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 93

SITUATION WANTED by second class expert, business experience, good carpenter, painter, fair mechanic microscopist, &c., good references.—W. H. W., c/o "B.B.J." Office, 23, Bedford-street, Strand, W.C.

FOR SALE, lady's bicycle, good condition, 35s.; small sack truck, 7s. 6d.; fifty bags malt-culms for poultry, 3s. bag; exchange healthy swarms, 15s.—Moston-lane, Manchester. v 72

SIX W.B.C. HIVES, as new, perfectly clean, covered roofs, 10s. 6d. each.—KITSON, Stanstead, Essex. v 89

COMPLETE volumes of "Gleanings," unbound, for 1908, 1909 and 1912, price 3s. 6d. each, post free. MANAGER "B.B.J." Office, 23, Bedford-street, Strand, W.C.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

As the establishment of an Experimental and Educational Apiary was entirely a new departure in this country, it was deemed advisable by the Development Fund Committee to send the lecturer and curator, Mr. W. Herrod, to Paris to see how the apiary there was conducted and to learn all possible about the methods adopted. Mr. Arnold Richards, a member of the Council and a French linguist, kindly consented to accompany him. Their report was presented to the committee and instructions given for it to be published in the BRITISH BEE JOURNAL as follows:—

"We have much pleasure in submitting to you the following report of our visit to the French School of Apiculture at Paris.

We arrived at that city on the evening of Sunday, August 25th, and on the following morning presented ourselves at the town house of Monsieur E. Sevalle, the President of the Société Centrale d'Apiculture. Unfortunately we found that Monsieur Sevalle was away from Paris on his summer holidays, but his son, who was there to meet us, informed us that his father would be very pleased to receive us at his country house at Issart le Roi if we could go there, which we arranged to do on the following day. On the Monday afternoon we visited Monsieur d'Autemarche, the Editor of *l'Apiculture*, the organ of the Société. We ought to mention that Mr. Cowan had kindly furnished us with cards of introduction both to M. Sevalle and M. d'Autemarche, and we feel that the extreme cordiality of our reception was due in no small measure to Mr. Cowan's prominent position in the bee world. During our visit both M. Sevalle and his assistant spared themselves no pains whatever to place all their available information at our disposal.

Tuesday was spent in visiting M. Sevalle at his house at Issart le Roi, but unfortunately it was too wet while we were there to open any of his hives. We tried, however, to take some photographs of his apiary and appliances, and noted particularly a delicate weighing machine of small dimensions capable of registering very minute alterations, and which fitted away in a small wooden box the exact length of the hive side and about 8ins. across and a foot in depth. This is used for making records of the changes from day to day in the weight of the colony. Another item of interest often missed in English apiaries was a large wax rendering appliance, but as the press used for this purpose also served, when fitted with different frames, for cider and wine-making, household industries so general throughout France, its presence was not surprising, but it is undoubtedly a great convenience to have a powerful machine always ready at hand for dealing with accumulations of surplus comb.

Monsieur Sevalle heard that Monsieur d'Autemarche was making arrangements for his assistant to show us the Luxembourg Gardens on the Wednesday, when he immediately expressed his intention of coming up to town himself and giving us his personal attention. The apiary is situated in a conspicuous position in the gardens, about 50yds. from a pathway which is constantly traversed by passers to and fro, while children are at play on the grass close by, yet we were told that there had been no accidents or complaints of the bees stinging, and the bees, though of various sorts, certainly seemed extremely quiet. On account of the position they enjoy some advantages which we cannot quite obtain at the Zoological Gardens. The Luxembourg Gardens are always open to the public, where there is a constant stream of passers-by, and as the lectures are open to everyone, many casual passers become students. The neighbourhood is also one much frequented by students, whose interest is generally more easily aroused than is that of the ordinary casual. Perhaps the greatest advantage they have arises from the fact that each year lectures are given upon fruit culture, and the experimental fruit garden is quite close to the apiary. These lectures are attended by about 200 students annually, and are given by the most prominent arboricultural professors. Many of these students are attracted to the apicultural lectures on account of the obvious connection between the two subjects.

The lectures are given in a hall specially built for the purpose known as the Pavillon de la Pépinière, which is conveniently situated quite close to the apiary and fruit garden. We were told that it will hold as many as 200 students, and that that number usually attend the fruit culture courses. For the apicultural course, there are usually from twenty to twenty-five regular students each year, who go right through the course and sit for the examination which is held at its conclusion.

Monsieur Sevalle has been the lecturer there for twenty-two years, and naturally, during that period has gained great experience, which has made the imparting of instruction easier than it was originally. Lining the walls of the lecture hall are designs showing the different structures of the bee. There are, however, two mechanical aids for the lecturer with which we were very much impressed. One is a model of a piece of comb, enlarged about ten times, and showing in each cell

the daily development of the bee from the laying of the egg to its exit from the cell. This model is made from a light but strong papier-mâché material, and it must considerably assist the lecturer. The other interesting aid, or rather aids, were some large size models of bees, about 4in. long, with every external detail of their bodies most accurately copied, even to the different hairs, and made so that the back of the models would lift off, while inside each model was shown in its proper form and position the internal system of the bee, so that it could be seen and understood at a glance. One model was of a queen, one of a drone, and two or three of workers. M. Sevalle could not remember the manufacturer's name, but he has promised to procure it for us.

They also possess a very fine collection of hives from all parts of the world, many of which were left to them by the exhibitors who brought them to the Great Exhibition. Then it should be remembered that they started their work over sixty years ago, and during that time bee-keeping itself has made very considerable strides, and a large number and variety of hives would naturally have accumulated in that time. This variety is particularly noticeable in visiting the apiary, which is emblematical of the history of the frame hive. Here we have the original leaf hive of François Huber to-day inhabited by a strong stock of black bees. There are twenty hives in all, placed very close together in three rows. All the hives are of different patterns and stocked with bees. The order of instruction is to first of all lecture in the Pavillon de la Pépinière, then the lecturer and class go over to the apiary for a practical lesson. There are only two courses of lectures each year, given every Tuesday and Saturday at nine o'clock in the morning, commencing at the end of March or beginning of April, and finishing at about the middle of June. As soon as the weather permits the students go to the apiary for practical work at the conclusion of the lectures, where the activities of the hives from winter opening to the harvesting of the honey are noted step by step. From the middle of May until about the middle of June the class goes in the afternoon to a model apiary in the Park de Montsceuis, which is some distance from the centre of Paris, and here practical modern bee-keeping is demonstrated.

This short bi-weekly two-course system is adopted in order to take the students right through the main practical work of an apiary. Each course includes about a dozen lessons, so that in duration they are what we have adopted this summer and autumn, and it is well worth our while to consider whether their methods should not be adopted during next spring and summer.

It would probably be unwise to enlarge our number of hives too rapidly; at the same time, the French consider that practical illustrations in some of the undesirable types are often more convincing than unaided theory. We cannot over-estimate the value of the models both of hatching brood and of the bees previously referred to, and would strongly recommend the committee to consider the question of procuring something similar, and also good designs and wall illustrations of the bee world.

It appears that a certain amount of instruction in apiculture, but from what we could gather of a much more limited nature, is given throughout France, and the Government grants numerous small direct subventions to societies throughout the provinces; but the complaint of Monsieur Sevalle is that this lack of co-ordination is not to the benefit of the industry, and the efforts on behalf of education are often dissipated and ineffective in consequence.

In conclusion, we can only reiterate our indebtedness to Monsieur Sevalle and his assistant for their great kindness and courtesy in sparing themselves no pains to show and explain their methods so fully to us.

SURREY B.K.A.

The annual meeting of the Surrey Bee-keepers' Association was held on the 26th April, 1913, at the Technical Institute, Redhill. Mr. W. Welch, J.P., C.A., the president, was in the chair, and the members present included Mr. F. E. Lemon (Mayor of Reigate), Mr. A. Seth Smith (chairman of committee), Mrs. A. M. Prince, Messrs. W. E. Hamlin, F. Bowers, A. Sinclair, C. T. Overton, A. T. Hedger, J. Kaehler, F. B. White (hon. sec. and treasurer), &c.

The annual report, the adoption of which was moved by the Chairman, stated that the early part of last season was very favourable, and the honey shown at the Guildford Exhibition was of exceptional quality. During the year thirty-five new members had been enrolled, the total now standing at 396. Eight qualified paid experts, with some assistance from honorary experts, visited members during the year, 1,123 stocks being examined, and 353 being reported dead, some of them undoubtedly from "Isle of Wight" disease.

Mr. Welch said the accounts were in a satisfactory state. They were glad to welcome the Mayor of Reigate, Mr. F. E. Lemon, and Mr. G. A. Touche, M.P., of Westcott, as new vice-presidents.—The report and accounts were unanimously adopted.

Mr. A. Seth Smith, of Cobham, moved a vote of thanks to the Surrey Education Committee for the grant of £150 made by them to the association, and for the free use of rooms for Council meetings. It was a matter for congratulation that they had again secured this grant for the current year. That the money was well spent was evidenced by the exhibits they got at their shows.—Mr. Hedger seconded the motion, which was carried unanimously. The chairman returned thanks on behalf of the Surrey Education Committee, who, he said, were perfectly satisfied with the work which had been done with the grant.

On the motion of Mr. Sinclair, seconded by Mr. Bowers, a hearty vote of thanks was passed to the retiring Council, and the new Executive Council was elected as follows:—Mr. Archibald Seth Smith, Admiral Swinton Holland, C.C., Lieut.-Col. J. A. C. Younger, Messrs. R. C. Blundell, C. H. J. Evershed, F. S. Fletcher, W. P. Gornall, G. C. Halahan, W. E. Hamlin, A. T. Hedger, John Kaehler, J. W. Lewis, A. H. Miller, W. F. Reid, E. J. Stevenson, E. Walker, A. Watkin, and T. H. E. Watts-Silvester, M.A., M.R.C.S. Hon. Secretary, F. B. White.

The Secretary stated that the annual show would be held at Guildford, on August the 6th, in connection with the Guildford and West Surrey Agricultural Association.

A discussion then took place with regard to the Bee Diseases Bill.

Mr. Hamlin moved, and Mr. Bowers seconded, a resolution to the effect that while the association was not opposed to legislation, it disapproved of the present Bill, the amendments required being the decrease of the penalty from £10 to £2, the prohibiting of inspectors from entering private houses, and the appointment of qualified inspectors.

This was carried, and referred to the Executive Council for expression in the proper quarters.—F. B. White, Hon. Sec.

AMONG THE BEES.

By D. M. Macdonald, Banff.

"IF BEE-KEEPING WERE AS BEE-KEEPING OUGHT TO BE."

If matters apicultural were as they ought to be, we in this country could carry on the industry with a pleasure and profit to which we are at present strangers. *Then* we would have our pursuit under the aegis of our Department of Agriculture, as Canada and New Zealand, daughters of the mother country, now have apiculture. We would have government experimental apiaries and queen-rearing establishments. We would have a Chief Apiarist devoting his time wholly to the good of the craft, aided by a staff of trained assistants. We would have a member of the staff of all our Agricultural Colleges devoting his time to imparting instruction on this interesting subject the "poetry" of agriculture. We would have bee-van work and lectures illustrated at first hand in every centre in the kingdom, the lectures bringing before the eyes of every bee-keeper in the land genuine practical knowledge of the very best and latest systems and manipulations. We would have men of science devoting their time to the study of all bee diseases, discovering their cause, and the best way of annihilating them. We would have intelligent united effort all over the country, instead of the cross-purposes at present only too common. We would, in fact, have a system of apiculture worthy of the name in place of the present haphazard and non-effective combinations, frequently pulling contrary ways. We should have a National School of Bee-keeping, somewhat similar to what is formed at present in Austria and Switzerland. Every bee-keeper in the land at present is very much a law unto himself; and, indeed, would be practically so but for the light shed by the British Bee Journal and *Bee-keepers' Record*. The lectures, demonstrations, exhibitions, and experts' examinations now in vogue only touch on the fringe of the subject. We require a place, or places, where a thorough apicultural training could be given right through a season. Will the "Zoo" scheme fill the void? Organisation is at present in a very imperfect state, and needs revolutionising. Here our Association members number only hundreds at the best. On the Continent they are often as many thousands! In our own country, with a strong effort impelled from a central body, endowed with the sinews of war, and carried out with energy by an Organising Secretary, of standing and influence, with cash behind him, devoting his full time to the work, they could number ten members at least for every one now in the ranks.

Experts should be sent out during the season to teach beginners how to manipulate their stocks to the best advantage, as is done in some places, but only in a tentative way at present. Far more honey shows ought to be encouraged all over the land. More advertising should be carried on to aid the sale of honey. Something should be done, and that speedily, to suppress the unblushing retail of inferior foreign honey as genuine British. At present firms bearing on their label the legend, "Purveyors to H.M. the King," are selling undoubtedly cheap dark foreign honey for pure Scotch heather. If bee-keeping were as bee-keeping ought to be, this would not be permissible!

Then, under the new régime, we could

really suppress bee diseases, because the raid against their propagation could be carried on systematically, as is proposed in the new Bill. County warfare against the fiend, good as far as it goes, has failed in the past because it is only partial and local. Extinguished on one side of an ideal line, the disease suppressed there may be rampant on the other side, and live there to propagate and carry on its ravages in the certified clean area. Any system to be thoroughly effective must be national. This it could be, perhaps, as we learn from other countries, even without legislative interference; but, if so, how much more thorough with Government aid to support its proper carrying out. Now, we sit supinely, and let the pest work its sweet will!

New Zealand can send out a model bulletin; Canada can collect exhaustive reports on all the phases of bee-keeping; the United States can issue reports of all kinds. *We* only are dumb! Private enterprise may make a partial effort, but national interest has been nowhere manifest in the past. In her Bee Diseases Act, encouragement in exhibiting honey, instruction in apiculture, even Ireland, through her Department of Agriculture, holds out a directing finger, pointing us the way (even if she does not herself walk consistently in the path marked out), but our Department of Agriculture hitherto has held firmly aloof. Little Switzerland and small Belgium can take action and suppress the arch-enemy, but wealthy Britain only now is waking up to investigate disease, and suppress its ravages. But now—better late than never—our Agricultural Department has given us a welcome first fruits in the Development Grant, which is a new and appreciated departure deserving our best thanks.

Under my ideal system of apiculture, the B.B.K.A. would be a more representative body than it is: the Association itself would be more of a living force, and the Council more of a subsidiary body. I would have members of that body from every corner of our Island, making it in reality a British Society. The present system of election is antediluvian, and ought to be abolished; it served its day, but we are advancing, and what was good enough forty years ago is behind the times now. I fail to see why Scotland should be left out in the cold. The Council (I use the restricted term advisedly) is at present the central body round which minor bodies are grouped. I lately described one of our County Associations as a "*branch*" of the B.B.K.A., and by first post had an indignant protest from its secretary. And yet this is exactly what I would like to see with Associations all over the land, and this is what we must have if apiculture is to flourish. The apportionment of the new Development Grant at present gives an excellent opportunity of drawing the bands closer and uniting all in one homogeneous whole. The charge is often made that the present Council is representative only of London and a few miles round. While this is inaccurate, the feeling that the management is over-centralised is sound and reasonable. While believing that the Council is doing, and will continue to do a great amount of good work, I feel that if built on a more popular basis vastly superior results can be realised in the future when we secure more representative management.

INTERESTING PICTURES OF BEE-LIFE.

Having seen some of Mr. F. W. Harper's work with the camera we have pressed

1. EGG, LARVA, IMAGO, QUEEN-CELL TORN DOWN.

him from time to time to let us have a few photographs for reproduction, as being of great interest to bee keepers.

Though small, his picturesque apiary is an important one, when we consider the amount of scientific work which has

2. QUEEN EMERGING.

emanated from this modest little garden.

It is ever so with the workers in our large cities. As a rule they take more

3. EXAMINING THE CELL.

interest in Nature's marvels than do the habitual residents in the country, who are

apt to look upon them as a matter of course.

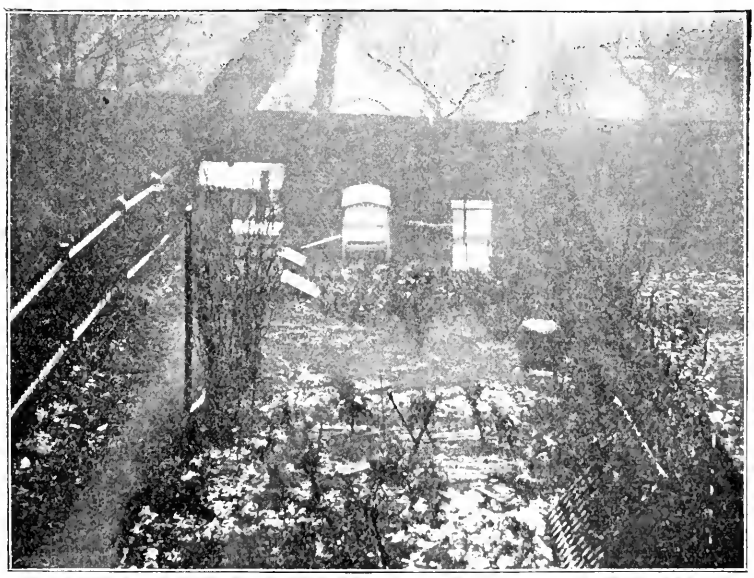
The photographs are marvellously well done. In No. 1 the egg is plainly seen in the first cell, while the larva is also shown as well as the imago. The dramatic end of the princesses, who are born late, is also clearly defined. In No. 2 we have a splendid photograph of the queen emerging, while in No. 3 she is shown examining the cradle in which she has been reared. Nos. 4 and 5 show the queen, drone and workers in natural attitudes, while No. 6 depicts the workers busily engaged in the slaughter of the drones. No. 7 shows the bees' place of refreshment. Knowing from experience the difficulty of photographing bee-life, we can fully appreciate the splendid results obtained by our contributor, and we feel sure that readers will join us in hoping that Mr. Harper will let us see more of his interesting work.

4 AND 5. QUEEN AND WORKERS.

6. SLAUGHTER OF THE DRONES.

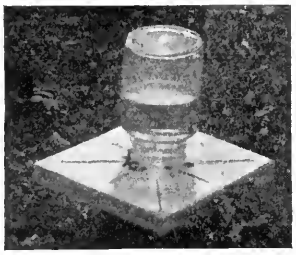
The following is the history of his bee-keeping career. He says:—

"My grandfather and father were bee-keepers before me, so I was consequently reared among the bees, and came into existence just before the bar-frame was standardised by the B.B.K.A. Always a keen student of nature—and of that my library specimens and photographs will bear evidence—I originally photographed and sketched birds'-nests and animals, for I am a trained artist. After hearing a lecture by Mr. Herrod some years ago, and noting the fine slides with which it was illustrated, I turned my camera on to bee-life, and have done so ever since in my spare time. It is fascinating, and at times disappointing work, for the bees will sometimes "ball" the queen, or she will take flight, just as you are about to expose, which means delay, the bees losing their temper, and the brood be-coming chilled; then hours have to be spent and many plates exposed before one picture can be obtained. In spite of this, good yields of honey are obtained from my bees, and every bit disposed of. My winter months are spent in hive appliance and slide-making, also studying bee literature, the 'B.B.J.,' and *Record*, and other current works.



MR. F. W. HARPER'S APIARY, LYNDHURST, WATFORD, HERTS.

"You will agree with me that there is a growing need for pictures, and that they are of educational value to the coming generation—novice and cottager. With regard to the latter it is a good plan to present him at Christmas with a copy of the "Bee-Keepers Guide Book," or back



7. FOUNTAIN FOR BEES.

numbers of the 'B.B.J.,' especially those containing the 'Hints to Novices,' for it spreads the knowledge of the craft, and costs but little (this I give as a hint to others).

"I hope, with the Editor's permission, to contribute photographs from time to time, and I trust that they will arouse interest in the inner wonders of the hive."

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

ROSS-SHIRE NOTES.

[8727] Bees are making steady forward progress here, although still far from the swarming point, as judging from the "B.B.J.," they have already reached in fruit-bloom districts. Still, we had drones flying on the first Sunday of May—a surprisingly early date for the North.

The foremost colony in this respect is a double-storied one headed by a "Heathfield" queen now in her third season, and seemingly still as prolific as ever. This particular stock was the only one that gave me any sealed sections at the moors last season, and for their good working qualities I forgive these bees much in the way of manipulating troubles. Still, at times I wish the bees were being handled by a bee-keeper "immune" to formic acid injections.

Since my short and sharp experience in 1911, I have had no further trouble with bee-paralysis, and heard of none locally until the other day a crofter called me in to investigate a dying colony. At first sight, the number of dying bees crawling on and under the alighting board suggested an outbreak of disease, but an examination of the brood-combs failed to reveal a single drop of honey, the dead lay in heaps on the floor, while the survivors hadn't strength to use their wings. Food was given at once and gratefully accepted. The colony may yet be built up for the honey-flow, but in such cases prevention is decidedly better than cure. Although this is summer by the calendar, yet the surrounding hills were freshly clothed in snow last week, cold winds prevail, the hawthorn has still to bloom, and valuable colonies may be utterly ruined by lack of stores.

Northern bee-keepers in particular should feed their bees now and keep on feeding until white clover begins to yield nectar.

The cost of keeping stocks in good heart is but trifling, and will be returned a hundredfold, for if the law of compensation holds good the coming season is sure to be as bountiful as the previous one was poor.—J. M. Ellis, Ussie Valley.

NOTES FROM MICHIGAN.

[8728] *Good Wintering.*—The cold winter a year ago resulted in great loss, even whole apiaries in some cases being destroyed. This had the effect of making bee-keepers more careful in protecting them, and few bees have been lost in the past winter. Double wall chaff hives may be used here with fairly good success, but careful bee-keepers put their bees in the cellar.

Fruit bloom is just coming on, and the outlook is promising. I wintered by selling all of my bees in the autumn, and have just bought some to begin the season.

Moving Bees.—After the hives have been closed with suitable ventilation provided, and are ready to move, I spread over the waggon a large piece of burlap and set the hives upon this. The sides and ends are carefully folded over the hives so that no bees can escape. This is all done before the horse is hitched to the waggon. Make a safe covering, should a hive get a hole in any way.

Painter's Blowtorch.—Among conveniences, if not necessities in the apiary, is the blowtorch. Fire is a sure purifier. Especially in using old supplies, the torch may be used to clean and rid of disease. It is not necessary to burn deeply, but all wax and bits of honey should be thoroughly cooked. This is a means of disease prevention easily applied. Cleanliness in the apiary needs more attention. Paint for outside and torch for inside of hives.—E. Ewell, Michigan, U.S.A.

SUNSHINE AND DISEASE.

[8729] On the 15th inst. you kindly reported upon some bees which I suspected were diseased. Directly after I had sent them the weather changed, and we at last saw the sun. There was an immediate improvement in the stock, the exodus ceased, and to-day the hive looked a great deal more like swarming than dying, so much so that I put a second rack on.

The next hive did swarm quite unexpectedly, a few minutes before I got home, and I lost them. If the hive first referred to were really affected with "Isle of Wight" disease, my experience may be a lesson to others who do not realise the absolute necessity of keeping record of all articles used. In September last I cleared all racks from the hives without the least suspicion of any disease, putting the unfilled ones away for use this season. In November one hive showed "Isle of Wight" disease, and in a short time was practically cleared out. I destroyed the remaining bees, burnt some of the fittings, &c., and put into a safe place the hive and other things for use after being scorched. But I forgot all about the empty sections, and have no doubt that some of these went into the hive which you lately condemned. The extraordinary recovery in a day or two is, to my mind, only to be explained by the sudden appearance of the sun, and I firmly believe that if we can have a reasonable amount of sunshine, "Isle of Wight" disease will disappear. I think the same remarks might be applied to foul brood, provided hives are kept clean and dry.—T. K., Carshalton.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Bees on the Farm (p. 175).—"D. M. M." does not say so, but I should judge that his directions apply more to Scotland than to England, particularly the South of England. I gather this from the late dates he quotes for various crops. Such measures as he suggests for June would hardly retard "swarms in May." June seems very late to be thinking about supers. I should prefer to use an extracting super to catch the tree honey. I cannot say that my own experience quite supports his advice. I should expect much brood and little surplus from a colony treated as he describes, and I do not quite see the advantage of the re-arrangement of the brood-nest in July. Possibly honey might be moved from one brood-comb to another brood-comb, but not, I venture to think, to the super, and I do not see what advantage the farmer would get, whilst these manipulations might fall in his busiest time.

Hail, Smiling May! (p. 176).—Fortunately, Mr. Woodley's invocation to the month has had no ill-effect. It has not hailed! May has indeed been a good month here, and now the may itself is out. It has been a little cold perhaps, but nectar from the flowering trees has dribbled regularly into the hives, and brood-rearing has proceeded apace. I regret to say I lost a number of stocks at the moor last autumn, and am unfortunately not alone in having experienced disaster. But we ought to be able to make up some of the heavy losses of bees should the year go on as it has begun. As, however, we are not yet out of the wood let us make haste to touch it!

More Slips (p. 178).—I shall certainly have to invest in a typewriter which can spell, for the sake of the long-suffering compositor, to whom my apologies are tendered. For "top roots" I really wrote "tap roots," but I am inclined to accept the correction, as it buries Mr. Smallwood still deeper. "Punare, implying danger," should have been "Punire, implying D-anger." Certainly, the former implies danger of correction, but Mr. Smallwood appears to have let me off, being too hotly engaged with another opponent. I cannot help thinking that the Editor has wisely intervened, or blood would certainly have been spilt by these men of letters. Speaking of letters, it occurs to me that the correct answer to the conundrum, "How does A.B.C.?" should be "With its I's." But this is asking the JOURNAL to accept the irreverent, if not the irrelevant!

"*I.O.W.*" *Disease* (p. 186).—I believe it is beyond dispute that all cases of the disease in the North have been due to imported Southern bees. Is it too late to plead with all sellers that they shall not despatch bees from infected districts, or even from *adjacent* districts; and to urge upon buyers that they should either refrain from buying or stipulate for substantial guarantee? Surely there is a market for Southern bees in districts where bees have already been lost through the ravages of this disease.

Evenly-built Combs (p. 196).—When foundation is inserted in the middle of the brood-nest, it is almost invariably drawn out unequally owing to the adjacent combs being widened at the same time. "D. M. M.'s" recommendation to insert between sealed brood is good, but not always practicable, and even so some portion of the comb will suffer, as there usually exist open cells of pollen and nectar. I think that some form of divider might be advantageously used, preferably of the fence variety or of thin wood pierced by numerous holes of about $\frac{3}{16}$in. diameter. I have experimented with such dividers with considerable satisfaction. They do, however, slightly interfere with

the queen and might be better used just outside the limits of the brood.

The Play Spell (p. 204).—Perhaps I was wrong in supposing puns to be out of place in the pages of the JOURNAL, as it is evident that they have their counterpart in the life of the hive! But Mr. Smallwood surprises me by his sorrowful accusation. I could not at first imagine upon what it could be based! But reference to back numbers does produce instances which may be mistakenly supposed to justify it. May I be allowed to assure Mr. Smallwood that such lapses have been quite accidental. Probably the compositor is to blame.

Queries and Replies.

[8640] *Time before Queens begin to Lay.*—On page 10, paragraph 14, of "Instruction in Bee-keeping," issued by the Irish Department of Agriculture, I find: "The young queen does not lay until about seventeen to twenty-one days after the top swarm has left."

On page 10 of the "British Bee-keepers' Guide" (Cowan), it states, "The young queen leaves the hive for fertilisation in from three to five days after birth," and a few lines further down, "About forty-eight hours after fertilisation she begins to lay."

Is there not a difference of opinion? I should be glad to know which is correct.—PUZZLED, Co. Donegal.

REPLY.—"The British Bee-keepers' Guide Book" is correct, the other is wrong. The swarm leaves the hive about three days before the princess is ready to emerge from the cell; five days later she leaves the hive for fertilisation, and within two days is laying. Add 3, 5, and 2 and you have 10. This is the average time under normal conditions; there are occasional exceptions.

[8641] *Renewing Combs.*—I have just started bee-keeping with one hive of bees in which I am very interested. When I received it there were eight combs, which were old and dirty; two of these had broken down in transit, so I decided to change them for new ones. The following is the method I used, and as it differs from the advice given to one of your correspondents in the "B.B.J.," I should like to know if I have done the right thing. (1) I reduced the six frames left to four by removing two empty combs, and placed them on top of six new frames fitted with full sheets of foundation, with a cloth between, with a 4in. hole in the centre. The bees are working out the bottom frames, but the queen has not gone down yet. Will she do so of her own accord? Of course, the four old frames are very crowded and full of brood. (2) On making an examination of the hive last week-end, I discovered two grubs (which I take to be wax moth) on top of the frames. In the "Bee-keepers' Guide Book" no remedy is given for the getting rid of these. I have put one ball of naphthaline in the lower brood-box. What is the best thing to do? (3) I should like to join some bee-keepers' association if there is one near. Can you give me any information? Also is there any way of insuring stock and hive against disease. As a precaution against "Isle of Wight" disease, I spray the hive every night with Jeyes' fluid.—W. D. W., Beckenham.

REPLY.—(1) Although it is not the plan we should have adopted, we cannot say you have done wrong. Remove the cloth and the queen will go down below of her own accord. (2) Naphthaline will keep away wax moths, and Apieure will destroy them. (3) The nearest association is the Crystal Palace B.K.A., Secretary, W. Broadhurst, Taymount, Queen's Road, Forest Hill. There is no insurance against disease. With regard to your inquiry about warning the neglectful bee-keeper, we are sorry we cannot undertake this work; if we did we should not have time for anything else, so numerous are the requests similar to yours. Only legislation can put these matters right. If you join the Crystal Palace Association they might use their influence in getting rid of the trouble.

[8642] *Swarming Vagaries.*—I should be much obliged if you, or any of your readers can give the reason of the following curious occurrence. (1) I bought a swarm of bees half a mile away, hiving them myself from a may tree on May 13th. I took them home in the skep and placed them in my garden, about five yards away from my other hives. They appeared to be safe on the 14th at 2 p.m., but two hours later they took flight again and no traces of them could be found. On the 15th, about 1 p.m., to our surprise, they came back and hived themselves in a disused hive a yard from the other bees. (2) On the 16th I bought another swarm from the same place. I hived them in the same skep, which was a new one, took them home and fed them in the evening. They appeared safe at one o'clock on the 17th inst., but at 2 p.m. they took flight (with the exception of about fifty bees, which are still there), but, unlike the first swarm, they have not returned yet, and I do not think it much use to "wait and see." Can anyone throw light on this strange behaviour?—CONSTANT READER, Henley.

REPLY.—Your experience is not unique. At times bees will abscond for no apparent reason. We should say the lot which hived itself was not the swarm which absconded but another one altogether. The two

swarms decamping in the same way is merely a coincidence and has nothing to do with position or skep.

Bee Shows to Come.

June 10 to 13, at Windsor.—Honey Show of the Berkshire Bee-Keepers' Association, in connection with the "Royal Counties" Show. Liberal prizes. Schedules from D. W. Bishop Ackerman, 161, King's-road, Reading.

June 11 and 12, at Braintree.—The Essex B.K.A. Annual Show, in connection with the Agricultural Society's Show. Open classes. Mr. W. Herrod will judge exhibits, and lecture in Bee Tent both days of show. Schedules from Mr. T. E. Lennox-Brown, Eagle House, Little Coggeshall, Essex. **Entries close May 31.**

June 25, at Richmond, Surrey.—Honey Show, in connection with the Richmond Horticultural Society's Annual Flower Show, in the Old Deer Park, Richmond. Open classes for amateurs. Special prizes for Honey and Wax. Apply to W. Cook, Hon. Sec., Holmesley House, Sheen-road, Richmond.

July 1 to 5, at Bristol.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. Schedules from W. Herrod, 23, Bedford-street, Strand, W.C. **Entries close May 31.**

July 17 and 18, at Lincoln.—Lincolnshire Agricultural Society's Show. Honey section, under the management of Lincs. Bee-keepers' Association. Prizes value £30. Open classes for Appliances, Observatory Hives, Extracted Honey, and Sections. Schedules from J. H. Hadfield, hon. sec., Alford, Lincs. **Entries close June 14.**

July 23 and 24, at Cardiff.—Glamorgan Bee-Keepers' Association, in connection with the Cardiff and County Horticultural Society's Show. Open classes for collection, sections, &c. Schedules from W. J. Wiltshire, Maindy School, Cardiff. **Entries close July 17th.**

July 23, 24, and 25, at York.—Show of Hives, Honey, &c., in connection with the Yorkshire Agricultural Society's Show. Liberal prize list. Schedules and particulars from J. Maughan, secretary, Blake-street, York.

August 6th, at Stoke Park, Guildford.—Annual Exhibition of Bees, Wax, Appliances, &c., will be held by the Surrey B.K.A., in connection with the Guildford and West Surrey Agricultural Association. Nineteen classes (five open to all). Many medals. Schedules from F. B. White, hon. secretary, Marden House, Redhill, Surrey. **Entries close July 26th.**

August 7th, at Bruton.—The Annual Show of the Somerset Bee-Keepers' Association, in connection with the Bruton Flower Show. Open classes. Schedules from Mr. R. Litman, South-street, Castle Cary, Somerset. **Entries close August 2nd.**

DRIVING BEES.

The following is a verbatim extract from Butler's "Feminine Monarchie," published in 1634, and may be of interest to present day bee-keepers.

"Another way to take the coms is by driving the bees. The manner of it is this. At Midsommer, or within two or three days after in a fair morning an hour before Sunrising, lift the stall from the stoole and set it upright and fast on the ground in a Brake with the bottom upward: and quikly cover it with an empty Hive; having first laid two spleets upon the full Hive's bottom that the empty hive may stand the faster. Then wrapping a mantle round about the Chink, or meeting of bothe the Hives, and binding it fast with a small cord above and beneth, that a Bee may not get forth: clap the full hive or Remover round about a good many times (pausing now and then a little between) that the Bees may ascend into the void hive. And when you think that most of them are driven up (which will bee about half-an-hour after) set the upper Hive, or Receiver, upon the olde stoole. Provided always before you go about this busines, that all the Stalls in your Garden bee first shut up, lest they trubble you and your poore Bees."—H. WIGLEY.

Notices to Correspondents.

F. C. R. (Cambridge).—*Yellow Trefoil.*—The plant is *Trifolium procumbens* or hop clover. It is not included among the good honey-producing plants, though the bees may get a little nectar from it.

W. R. M. (Church Fenton) and CONSTANT READER (Wishaw). — *Insect Nomenclature.*—The insect is the mason bee.

A. M. (Kincardine).—*Swarm not Clustering.*—The queen is a virgin. It is difficult to say what happened without being on the spot but it is quite possible that your suggested solution is the right one.

HONEY BEE (Sidmouth).—*Honey Sample.*—So far as we can judge, it is a sample of an inferior foreign honey.

C. L. N. P. (Shalbourne). — *Curing Disease.*—We thank you for your interesting letter, but should like you to observe the stock for a few weeks before deciding that it is cured. We know of many cases in which the disease has apparently disappeared, only to break out again with renewed virulence. We shall be pleased to hear from you again.

E. F. LEDGER.—*Sowing Clover for Bees.*—(1) Certainly it would; you could also sow melilotus. (2) Either early autumn or early spring. (3) Ordinary white Dutch clover. (4) Yes, as it would not be cut.

SCHOOLBOY (Dursley).—*Report on Bee Disease.*—(1) The last report was issued May, 1912. (2) From the Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W. (3) The price is one shilling.

J. B. N. (Nuneaton).—*Wild Bees.*—The bees are a species called *Andrena*, a common wild bee in this country.

F. JARRETT.—*Broodless Stock.*—(1) The comb contains pollen only. (2) It is evidently the fault of the queen, not necessarily through her being old; she may be defective in some way. An old queen is generally sluggish in her movements, and has badly torn wings.

Suspected Disease.

Ross-on-Wye.—The comb is affected with foul brood.

F. J. A. (Brentford).—The stock is affected with "Isle of Wight" disease. Destroy the bees, and burn the contents of hive, disinfecting the latter by scorching. Be careful to pick up and burn any dead bees lying about the apiary.

I. X. Y. Z. (Manchester) and D. G. (Nairn).—The bees were too dry for examination.

Doubtful (Cheshire).—Both lots of bees had "Isle of Wight" disease.

E. T. (Cornwall).—The bees have died from starvation.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

WANTED, immediately, secondhand Honey Extractor; state all particulars and price.—WOTHERSPOON, Brampton, Cumberland. v 35

FOR SALE, old bee books and magazines.—EDWIN EWELL, Litchfield, Mich., U.S.A. v 36

"TRANSACTIONS of the Entomological Society of London," 1903-1906, inclusive, unbound; what offers?—ROWLANDS, Richmond Hill-road, Edgbaston, Birmingham. v 38

FOR SALE, thirty-six secondhand Section Racks (Taylor's); three Honey Tins, with tap, new; two Lee's No. 145 Hives, new.—For particulars apply, COOPER, 45 Bunyan-road, Hitchin. v 40

FOR SALE as going concern, a complete modern Bee Farm, consisting of all appliances for fifty-five stocks, comprising thirty stocks English, carefully bred and guaranteed healthy, twenty-five spare hives, 100 supers, 500 brood, 1000 extracting combs, clean, excluders, escapes, extractors, market tins, show travelling packages, feeders, frames, foundation, and everything needed and in new condition, hives mostly Cowan telescopic, 1in. material, seven Simmins' Conqueror, large and splendid extracting house, average take 18cwt., good cottage, large garden, and meadow land, remarkable honey district, rent £8 yearly.—Particulars and price from DAVIES, Bagshot, Hungerford, Berks. v 27

WANTED, two fertile Queens, 1912; state price.—HENDERSON, Murray-place, Lamlash, Arran. v 39

FOR SALE, sixteen racks shallow Extracting Combs, nearly all new last season, 4s. 6d. each, including rack; also Uncapping Tank, 7s. 6d.; and large Ripener and Strainer, 8s.—JAMES MCGAVIN, Ivy Cottage, Burn-road, Darvel, Ayrshire. v 37

SWARMS, from guaranteed healthy stocks, 12s. 6d. each, disease unknown in district.—MORRIS, stationmaster, Shoeburyness. v 34

WANTED to purchase, for delivery in early July, two tons finest quality Scotch Clover Honey, in sections and extracted; quotations will oblige.—GEO. W. PAISLEY, Wayside Apiary, Newport-on-Tay. v 32

FOR SALE, Raynor Honey Extractor, 19s.; Wax Extractor, 3s.; twelve zinc Excluders, 4s.—TAYLOR, Acacia House, Beverley. v 33

TWO good eight-frame Stocks, 21s. 6d. each, 40s. the two; autumn, 1912, driven lot, on four frames, full of brood, 10s., all 1912 queens.—GEO. MACKIE, Mythe, Tewkesbury. v 31

APPLIANCES, cheap clearance; write for particulars.—51, Lower Mortlake-road, Richmond, Surrey. v 30

AN EXCEPTIONALLY STRONG SWARM, now on seven frames, full sheets wired, 18s. 6d.—MULLEY, Upton-on-Severn. v 29

SWARMS during June, 14s., from bar frame hives, cash with order, guaranteed healthy; stamp for reply.—J. REAVELEY, Starbeck. v 24

CLEAN shallow super combs, 3s. dozen; W.B.C. section racks, new, 3s.; W.B.C. racks, nearly new, 1s. 9d.; good secondhand hives, new frames, excluder, and rack, complete, 5/6; large new rapid feeder, 2s. 6d.; what offered quantity light beeswax suitable for show; also 3-frame observatory hive, in dark walnut, also single frame 4-section observatory, both suitable for showing; honey ripener, honey extractor, quantity queen-rearing appliances, owner giving up.—R. JOHNSON, Little Hinton Swindon. v 23

GOING ABROAD.—Bargain, four good hives, six section racks, three queen excluders, clearer, smoker, veil, quantity of frames, with ends, the lot to be cleared, all clean and healthy, 30s., or offers.—YOUNG, Sunny Bank, St. David's, Pem. v 20

GUARANTEED strong healthy swarms, 10s. each, or 2s. 6s. lb., cash with order.—WHITTING, Manea. v 19

QUANTITY of bee appliances for sale, many articles never used; write for particulars; owner gone to South Africa.—E. DAVIS, North Dean Farm, High Wycombe. v 21

EXCHANGE, bee appliances for gentleman's bicycle.—SEADON, Apiary, Bromley, Kent. v 42

5 CWT. LIGHT CLOVER HONEY, in 56lb. tins, 59s.; sample, 2d.—COOK, Torwood, Ashford, Middlesex. v 59

BLACK LEGHORN CHICKENS, from typical healthy stock, bred by selection for prolific laying twelve years, 6s. per dozen; with reliable hen, 2s. 6d. extra; live delivery and strong chickens guaranteed.—A. SHARP, Halstead Farm, Barrowford, Lancashire. v 15

FOR SALE, eight W.B.C. hives, complete, new 1911, painted three coats, calico covered roof, 12s. 6d. each, £4 10s. the lot.—S. MATTHEWS, Station-road, Port Talbot. v 17

BEES and appliances for sale, Abergavenny, W.B.C. hives.—Apply, in first instance, to SMITH, Cairntons, Highfield, Rhyl. v 96

CONQUEROR HIVES.—Double, single, supers, appliances, cheap; state requirements.—HULBERT, Hermitage, Worcester. v 4

HEALTHY SWARMS, early June, 15s., box free; orders booked in rotation.—E. LANG, New-road, off Yarrow-road, Chorley, Lancashire. v 93

SIX W.B.C. HIVES, as new, perfectly clean, covered roofs, 10s. 6d. each.—KITSON, Stanstead, Essex. v 89

COMPLETE volumes of "Gleanings," unbound, for 1908, 1909 and 1912, price 3s. 6d. each, post free.—MANAGER, "B.B.J." Office, 23, Bedford-street, Strand, W.C.

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

Editorial, Notices, &c.

OBITUARY.

THE RIGHT HON. LORD AVEBURY, P.C., F.R.S., ETC.

It is with deep regret that we have to record the death of Lord Avebury, which took place at his coast residence, Kingsgate Castle, near Margate, from the after effects of an attack of influenza.

The Right Hon. Sir John Lubbock, Bt., by which title he was better known, was born on 30th April, 1834, and had therefore just completed his seventy-ninth year. His father, Sir John Lubbock, Bt., was head of the banking firm of Robarts, Lubbock and Co., and was a man of science, a love for which the son inherited. He was educated at home, and for a short time at Eton, but at the age of fourteen he left school to enter his father's bank, and at twenty-two he became a partner of the firm. His father's scientific attainments brought him in direct contact with the leading scientists of the day, so that young John Lubbock, even while a bank clerk, had opportunities of mixing with such men as Faraday, Owen, Lyell, Murchison, Mantell, Airy, Herschell, Hooker, Huxley, Darwin, and many others, and thus acquiring knowledge which later he put to such good use. Although born the heir to a baronetcy and a fortune, he chose a busy life, devoted himself to banking and to his better known activities as statesman, man of science and author. He was one of the most many-sided, as well as one of the most valuable, public men of recent times. Lord Avebury will always be regarded as a most successful Parliamentarian, for, besides the Bank Holidays Act, which he introduced and piloted through the Legislature in 1871, in his thirty years in the House of Commons he introduced twenty-eight Acts of Parliament.

As a scientific man, Lord Avebury was eminent, and zoology, botany, geology, and archæology were among the branches of study in which he was distinguished. There are not many authors whose works were so varied and numerous, and which have become standards. As a naturalist his observations induced him to study insects, and one of his first and best works was a record of his observations on "Ants, Bees, and Wasps," at present in its seventeenth edition. He was a most prolific writer, and among some of his best works are "The Beauties of Nature," "The Pleasures of Life," "Fifty Years of Science," "Flowers, Fruit, and Leaves," "The Origin and Metamorphoses of Insects," "On the Senses, Instincts and Intelligence of Animals," "Buds and Stipules," "British Wild Flowers in Relation to Insects," and many others. He also contributed many papers to Scientific Societies, and over 100 Scientific Memoirs in Transactions of the Royal Society. As recently as June of last year he contributed a valuable paper on "Notes on Pollen," which was read at a meeting of the Royal Microscopical Society.

He took a great interest in bees, and was the first President of the B.B.K.A., a position which he retained for several years, until he was succeeded by the Baroness Burdett Coutts. He also remained a subscribing member of the Association until 1900. In 1875 he gave a garden party at his residence, High Elms, Down, Kent, and invited Mr. John Hunter, the Secretary of the B.B.K.A. to give a demonstration and lecture on bees, which took place in one of the Association's tents, and gave a great impetus to bee-keeping in the country. In 1908, at the invitation of the Council of the B.B.K.A., Lord Avebury presided at the Franco-British Congress of Bee-keepers, at which he gave an address "On the Subject of Bees," giving particulars of some of his observations.

The Right Hon. Sir John Lubbock was created first Baron in 1900, taking the title of Lord Avebury, which was derived from Avebury, a small village in Wiltshire, the site of the largest supposed Druidical Temple in Europe. It was proposed to destroy what remained of this relic for building purposes, but Lord Avebury averted this calamity by purchasing the estate. He was a Privy Councillor, and although never himself an alumnus of any university, he had conferred on him the degrees of D.C.L. of Oxford, LL.D., of Cambridge, Dublin and Edinburgh. He was Deputy Lieutenant, Vice-President of the Royal Society, and past President of the Linnean, Entomological, Royal Microscopical and several other societies, as well as honorary member of many foreign Scientific Societies. He took an interest in education, and was President of the London University Extension Society. He also took an active part in city life, and was President of the Central Association of Bankers, of the London Chamber of Commerce and many other organisations. On the whole, he was a man of wide sympathies, and passes away as one who has lived almost an ideal life of usefulness. His high intellectual endowments and the ease and fluency with which he wrote and spoke enabled him to attain success by scientific research, and zeal in public affairs, which mark him as a public benefactor. To those who knew him in social life his memory will be cherished as a man of unaffected simplicity, genial manners and firm friendships.

NORFOLK B.K.A.

ANNUAL MEETING.

The annual meeting of the Norfolk Bee-keepers' Association was held in the Concert Hall, Holt, on April 30th. Dr. O. Kentish Wright presided over a good attendance of members.

The Hon. Secretary (Dr. Wardleworth) presented the annual report and balance-sheet. The balance-sheet showed receipts amounting to £35 1s., and the expenses amounted to £28 6s., a balance of £6 15s. being carried forward. Both report and balance-sheet were unanimously passed.

The officers of the Association were elected as follows:—President, Lady Hastings: vice-presidents, the Master of the Rolls, Mr. H. W. A. Deterding, Mr. Noel Buxton, M.P., Mr. H. D. King, Mr. B. Cozens-Hardy, and Captain R. C. Batt: committee, Mrs. Arthur Preston, Miss Leaver, Miss Verrall, Mr. H. Woolsey, Mr. E. Mann, Mr. J. Platten, Mr. C. Clarke, Mr. H. Bond, Mr. A. Woodhouse, Mr. W. Walpole, and Mr. E. J. Page: delegates to British Bee-keepers' Association, Dr. Wardleworth and Mr. Basil Cozens-Hardy.

The reports of the Association's experts were then presented. Mr. J. Lockwood reported that he had visited twenty-eight stocks of bees of members, and found three suffering from foul brood and two from "Isle of Wight" disease. Most stocks went into winter quarters in a poor condition, and would require a deal of feeding in the spring.

Mr. Nicholson reported inspecting twenty-eight stocks, of which twenty-three were healthy and five diseased. The honey harvest has been practically nil in many cases.

Mr. Platten reported visiting 204 stocks, and Dr. Wardleworth visited 132, all of which were healthy, as were the sixty visited by the Rev. W. E. Mattinson.

A lecture, full of authoritative information to bee-keepers, was then given by Mr. Herrod, F.E.S., of London, on "The diseases and enemies of bees." Mr. Herrod said he had heard with surprise and regret that only 25s. had been given to that Association by the Norfolk Education Committee. He had attended many meetings of County Bee-keepers' Associations and could assure them that £25 was the minimum grant made by other Education Committees to the funds of similar associations. After dealing with foul brood or bee pest, its symptoms and treatment, Mr. Herrod dealt with the "Isle of Wight" disease. There was no known remedy, and once it got into a hive the colony was inevitably destroyed. It was necessary to have legislation, in the interests of bee-keeping, to gain control over the spread of this disease. Its importation into unaffected localities had been definitely traced, and conclusively shown to be due to the carelessness of bee-keepers. Mr. Herrod then dealt with chilled brood, black brood, and scald brood. He followed with an account of the enemies of bees, enumerating among these the green woodpecker, the blue-tit, mice, toads, spiders, the wax moth, earwigs, and aphides. The value of the lecture was greatly enhanced by a number of excellent lantern slides.

On the proposal of Mr. E. J. Page, seconded by Mr. J. Platten, a hearty vote of thanks was accorded Mr. Herrod for his lecture. In response, Mr. Herrod said the lecture was given gratis by the British Bee-keepers' Association, which was acting on the principle of helping those who helped themselves. The Government had now followed the lead of other countries and had given a grant towards apiculture.

The following resolution was unanimously passed and ordered to be forwarded to Mr. Runciman:—"This Association is strongly of opinion that every facility for the passing of the Diseases of Bees Bill this present session ought to be given."

A hearty vote of thanks to Dr. Kentish Wright for his services in the chair closed the meeting.—D. WARDLEWORTH, Hon. Sec.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

FITTING AND WIRING FRAMES.

When teaching bee-keeping nothing is more annoying to me than, after having shown bee-keepers how to do work properly, and given them reasons for carrying it out in a certain way, to be told on the one hand, "Oh, well, that is all right for those who do bee-keeping on a large scale, but with one or two hives it doesn't matter," while those who have a large number of stocks make the excuse that, having so much to do, they have not time to fad around doing it in that manner. Both are wrong; if the work is worth doing at all it is worth doing well. Another axiom is also applicable: "The busiest people have the most time."

For comfort in working and security of the combs under all conditions it is necessary to put the frames together in a proper manner, and also to stretch wire across them to be embedded in the foundation.

At the present time no practical person dreams of putting together frames with plain squared ends, which necessitates the use of a frame block to hold them in position, and are insecure when nailed up, as the nails can only be driven in lengthwise with the grain. These often draw out when weight is put upon them, and cause a great deal of trouble and often the receipt of a number of stings. It does not pay the bee-keeper to make frames at the present time, as machine

made ones can be bought so cheaply, and as they are lock-jointed it would be difficult to make them as accurately by hand; reference to Fig. 4 will show the locks at top and bottom of the end bar. There are various methods of wiring frames, and the designer of each considers his the best. By some the plan of cutting half way through the end bar to fasten the wire is adopted; this weakens the frame considerably, while the boring of holes in the end bar, through which the wire is threaded, is a tedious and lengthy process. Vertical wires are

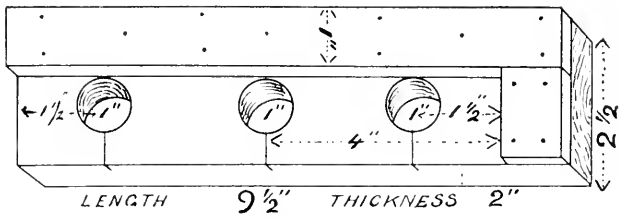


FIG. 1.

not of much service, for if the foundation gets very soft in hot weather it is quite possible for it to slip down; it also sags the top and bottom bars. I desire to give a method which is the simplest and most effective one I know and which I have used for the past twenty years. It has the advantage of cheapness, for all the appliances required can be made by the bee-keeper. Complicated outfits are a nuisance. It is curious how many people try to invent wiring outfits on the line of "You press the button and we do the rest," and as these wonder-workers are frequently most unpractical, their

FIG. 2.

inventions are not at all suitable for the purpose for which they are intended.

Frames should always be bought in the flat, as they are less bulky in transit and for storing, so that a good supply can be kept on hand, as they occupy very little room.

The mode of fastening the wire is by means of four very fine wire nails driven through the end bar and a hook turned on the end. This should be done before the frame is put together, and for comfort in working, and also to secure regularity in the distance the nails are apart, a nailing block, Fig. 1, should be made. As shown, the length is 9½in., width 2½in., thickness 2in. A slip of wood ¼in. thick and 1in. in width is nailed on one side and across one end to form a stop. Two holes are then bored in the block 1in. in diameter and 1½in. from the centre to the end of block and up to the stop. A third hole 4in. from centre to stop will make the block so that it can be used for either brood or shallow frames. The end bar of the frame is laid on the block, as shown at Fig. 2, and a nail driven through at the centre of each of the two end holes. The holes in the block allow the nail to pass through without fastening the bar to the material underneath which would be the case if it were laid flat on the bench. Having driven the nails in position, the round-nosed pliers,

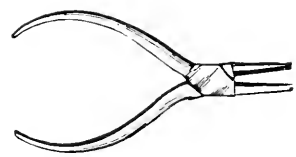


FIG. 3.

Fig. 3, are used to turn the nail into a hook, as shown at Fig. 4. The hooks should be turned outwards towards the end of the bar; it will be seen that the more strain is put upon the hook the tighter it will hold, on account of the head of the nail being on the other side. This is much better than using the small brass hooks to screw in, sold for the purpose, as they pull out very easily when strain is put upon them.

If the nails have to be put through after the frame is made care should be taken to hold it so that the end bar being nailed is solid; if reared up on the bench and the nail driven through the bar at the highest point it will break, yet many times I have seen this done. Rest the frame on a corner of the bench, as shown at Fig. 5; it will then be quite solid and the nails can be driven through easily.

The next operation is to put the frame together. Lay the top bar on the bench with the rough side—*i.e.*, the one not planed—uppermost, so that when finished it will be inside the frame and not at the top; this facilitates cleaning, gives a better appearance, and in the plain top

bar gives a more secure hold to the wax. Drive both the end bars into position with a hammer, then the bottom bar; now nail through the locks in the top bar from the side, and not from the top, the bottom bar having no weight to carry can be nailed through from the bottom, *i.e.*, lengthways of the grain. The locks are so small that if an attempt is made to

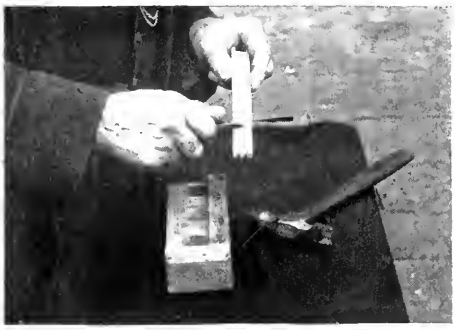


FIG. 4.

nail through them sideways they will split. If the work has been carried out properly the frame will be quite true, so that when held flatwise it will be seen that all the edges are parallel with each other; if this is not the case then it must be twisted till

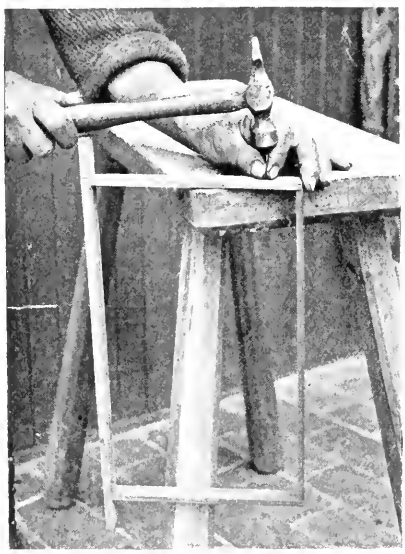


FIG. 5.

they assume that position, otherwise, when placed in the hive they will hang irregularly, so that imperfect combs and bracing of the same will result.

We are now ready for the wire, which is obtained in reels. This is of 30 gauge, and must be tinned. During the operation it must be kept quite straight, any twists or kinks will cause it to break, therefore it is advisable to have a stand for the reel. Fig. 6 illustrates one form of stand which can be screwed to the wall at the back of the bench, or on to the bench itself; another neat arrangement is that shown in Fig. 7, designed by the Rev. F. S. F. Jannings, with the idea of only having the reel exposed when working,

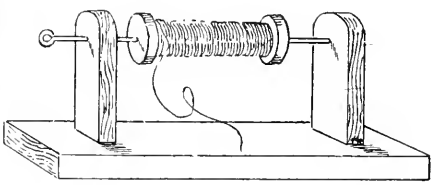


FIG. 6.

and so preventing the wire from rusting; it can be fixed in any position by just sticking the spikes into the bench and resting the other end on a piece of wood or a matchbox.

A neat loop should be made on the end of the wire, a bradawl put through this and pushed into the bench. The length required for a brood frame is 54in., so that a mark made on the bench that distance from the hole in which the bradawl is placed each time, will enable us to measure off the wire with the minimum of trouble. The length required for a shallow frame is 51in. When we have about six wires on the bradawl we proceed to stretch

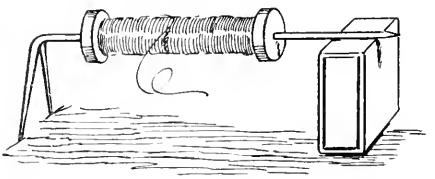


FIG. 7.

them; if this is not done it is impossible to get the wire to remain taut in the frame. To do this take hold of the loose end with the round-nose pliers, gripping it with the square portion near the rivet, pull steadily from the bradawl until the wire has stretched from three to four inches; each strand will now lie quite straight instead of curling up.

(*To be continued.*)

CINEMATOGRAPH LECTURES ON BEE-LIFE.

Mr. J. C. Bee Mason, the well-known lecturer, is starting a tour in the provinces, when he will present the series of cinematograph pictures illustrat-

ing his lecture on "The Life of the Bee." In addition to this he will show "The Bee-hunter," and "The Bees' Eviction." One of the series, showing the birth of the queen, occupied Mr. Bee Mason for six weeks before he secured a satisfactory result, and shows the pains he has taken in preparing this unique collection of bee pictures, which aroused much interest when exhibited in London in the early part of the year. Mr. Bee Mason starts his tour at Bishop Auckland on June 16th; on June 23rd he will be at the Hippodrome, Buxton: June 30th, at the Cinema House, Fargate, Sheffield. He remains one week at each place, and dates and places of further lectures will be announced from time to time, so that bee-keepers in the districts visited may have an opportunity of seeing these wonderful pictures, which have considerable educational value, and are well calculated to arouse interest in the bee and in bee-keeping.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

"ISLE OF WIGHT" DISEASE.

[8731] It would be a valuable aid in the administration of the Bee Diseases Measure, when it comes into operation, if we could get some definite information as to how the "Isle of Wight" disease spreads from hive to hive.

I have been trying to imagine how this disease would "persist" in conditions outside man's interference, and feel strongly that there is only one method, *i.e.*, by taking advantage of the bees' habit of robbing. The rapid decease of the bees of a stock, so that they leave abundance of stores to be robbed by other hives is suggestive of this, and also indicates by its complete success the possibility that there is no *need* for any other way of spreading: it therefore is possible that this is the only way the disease spreads from hive to hive.

I invite criticism of this theory, and I go further, and suggest: (1) that the disease is not infectious, and is contagious only through the medium of honey; (2) the disease in a hive is lodged in the pollen of the honey and spreads in a hive throughout the honey in that hive, *i.e.*, the disease does not spread direct from bee to bee; (3) the bees get the disease into their intestines by eating the honey and pollen contained in the honey, and in no other way; (4) the disease cannot get a lodgment in a queen because she is fed on prepared food, *i.e.*, does not eat pollen as workers do in consuming honey. —J. N. Kidd, Stocksfield-on-Tyne.

NOTES FROM DERBYSHIRE.

[8732] Yesterday (May 31st) I found my first head of white clover, and so am now anxiously awaiting what is to me the chief, and practically the only, source of surplus honey. I am sorry to say that up to a few days ago my stocks were not in the best of trim, but this week of warm weather, associated with a honey-flow from late fruit-blossom, has worked wonders. The backwardness of my own stocks is easily explainable. My apiary is situated a few hundred yards away from my residence. During the month of March some evilly disposed person, or persons, entered and upset the whole of my stocks. It was several days before I visited my hives, and then discovered one stock totally destroyed and the remainder very much damaged. The police were able to find out the perpetrators of the damage, but as one cannot get blood out of a stone, it was impossible to get any compensation for damages. Nor would prosecution have done any good. The expense would probably have fallen on me. In such case I had to grin and bear it!

Our local travelling expert tells me that stocks are in various stages of advancement up and down the country. In some districts he has assisted in putting on the second super; in others there may be only two or three frames of brood in the hives. These latter are in the high wind-swept regions of the lower Peak, where the honey-flow comes on late.

I hear that foul brood exists in various districts, and that, worst of all, the dreaded "Isle of Wight" disease has found a footing in the county. The first case of this complaint notified in the county is now local history among bee-keepers. It was due to a novice purchasing a stock from a firm of dealers.

I hear that many and various are the remedies being tried, but apparently with little or no effect. I cannot say that I have heard of any case of this disease in close proximity to my own apiary, and hope that it will still maintain its distance.

In the meantime, I am wondering what to do should it come along. After so many have experimented and failed, shall I at once give the only recognised cure—a brimstone pill—or shall I try to cure by other means. Perhaps, for the sake of any healthy stocks, and in the interests of neighbouring bee-keepers the former will be the better course, should such an eventuality occur. *Later*: I note that in

this district this year sycamore bloom is nearly a minus quantity, and that a useful source of food supply is consequently absent.—D. Wilson, Belper.

LOSSES FROM BEE DISEASE.

[8733] I was very much interested in the letter from Mr. Price (page 205), and also in your reply to a correspondent signing himself "Sceptical" (Newcastle, page 209), in your issue of May 22nd, for I, like the above, have been receiving this bee paper from an anonymous donor. I look upon it as an honour to receive it, for it is a proof that I am looked upon as a loyal supporter of the British Bee-keepers' Association and its officials. The last number received is for May, certain parts underlined, but I decline to turn the handle to grind their axe. No doubt I was the first in Derbyshire to take the paper, but as I was out to learn something about bee-keeping, I soon found I was not getting value for money, therefore I dropped it.

I still continue to receive distressing letters from bee-keepers who are being hit heavily with the "Isle of Wight" disease. They are very painful reading; one friend, who got two tons of honey from his bees two years since, wrote me a few days ago saying he had not a bee left. The southern dealer who sent the "Isle of Wight" affected stock into Derby last year, replaced it by another, but this very soon died as well. Round here, stocks that were weak a month ago are now going very strong, and are storing freely from fruit blossom.—J. Pearman, Derby.

THE SEASON IN LANARKSHIRE.

[8734] I heard nothing further from the owner of the diseased hives which I burned, as reported in "B.B.J." of May 8th. The loss in this neighbourhood during the fall was about thirty hives, through "Isle of Wight" disease. The weather here has been exceedingly bad for bee-keeping, as during the month of April we had only eleven days on which bees were out, and on some of these only for a few hours, the remainder being either very cold, wet, or snow; sometimes the lot was served in one dish.

Yesterday (21st May) we had a terrible and sudden storm. Thunder, hail, rain, and a murdering wind that the bees flying could not possibly face, with the result that thousands never again reached the landing boards. It was a sad sight to see the poor creatures that did manage to get back almost to their home being dashed against their hives only to fall and there drown in the deluge of rain which accompanied the thunder and lightning. I went away from the hives, but somehow could not dispel from my mind the thought of the awful havoc which was being wrought with those I had just left but could in no way help. Thanking you for your insertion of my letter re diseased hives, I trust that I imparted to others the surest method of curing, or helping to cure, this dreaded disease, and wishing your journal the success it so richly deserves.—J. R.

[We are pleased to hear of your satisfactory transaction with the queen breeder in question, but cannot insert the part of your letter referring to it, as it is against our rule to give prominence to any particular firm in this way.—Eds.]

FROM AN ANCIENT BEE BOOK.

[8735] As the busy (and stinging) season is now upon us, I venture to transcribe the following quaint, amusing, and interesting extract from an ancient bee book I have the good fortune to possess, for publication in the "B.B.J.," if thought of sufficient interest.

The expressions used are not exactly Vere de Vere, but of sound and good morality. In those ancient days they evidently called a spade a spade. Here is the transcript exactly as spelt and written:—

"But if thou wilt have the favour of the Bees that they sting thee not, thou must not be (1) unchaste (2) uncleanly, for impurity and sluttishness, (themselves, being most chaste and neat) they veriely abhorre, thou must not come among them, (3) smelling of sweat, or having a stinking breath caused either through eating of Leekes, Onions, Garlecke and the like, or by any other means; the noisomness whereof is corrected with a cup of Beere: and therefore it is not good to come among them before you have drunke: thou must not be given to (4) surfeiting and drunkennesse: thou must not come (5) puffing and blowing into them, neither hastily stirr among them, nor violently defend thyself when they seem to threaten thee but softly moing thy hand before thy face, gently put them by, and lastly thou must (6) be no stranger unto them. In a word thou must be chaste, cleanly, sweet, sober, quiet and familiar, so will they love thee, and know thee from all other."

To revert to modern times, here is an exact copy of an advertisement which appeared in the *American Bee Journal* for May, 1913:—

"Wanted help in a queen-rearing apiary, male or female, experienced or to learn. No drinker or tobacco chewer.—Address J. L. Strong, Clarinda, Iowa."

May I say I am much interested in the State of Iowa. When a young man I obtained a certificate for teaching in the

Government School there. A school marm once said to me, "I have nothing to say against a young man who chews, but I have no use for one who smokes."—(Revd.) F. S. F. Jannings.

Queries and Replies.

[8643] *Several Eggs in each Cell.*—I should be pleased if you would answer the following questions in the next issue of "B.B.J.":—(1) On examining one of my stocks (a very weak one) I found a small patch of capped brood and a good number of cells containing two and three eggs each. I have mentioned this to two experienced bee-keepers, and they tell me they never heard of such a thing. Can you tell me the reason? (2) I have thought of giving the stock a frame of brood from a stronger hive. What age should the brood be when given? I may say the queen is in her second year.—E. Harper, Yorks.

Reply.—This frequently occurs when the colony is too weak to keep up the temperature necessary for the incubation of a large number of eggs. (2) What you require in the hive is bees, and not a frame of brood, which from the above you can quite understand would only become chilled. The best plan would be to kill the queen and unite the few bees to another stock.

[8644] "*Isle of Wight*" *Disease.*—*Queen Introduction.*—(1) What are the first signs of "Isle of Wight" disease? (2) How long will bees live after they become affected? (3) Is it any drawback to bees in a skep if they are kept inside a frame hive body-box? (4) Is it wise to dust with flour the bees and the queen for safe introduction to a hive which has to all appearance been long queenless?—J. H., Whitley Bay.

Reply.—(1) When first affected, the bees raise the abdomen and rub it with their hind legs; at times the alighting-board is stained with excreta, and eventually the bees drop to the ground and crawl, being quite unable to fly. They get in small clusters, and creep up blades of grass and eventually die. The hind wings are often dislocated, and the abdomen very much distended. (2) The time varies. (3) No. It is much better, however, to have the bees on movable combs in the hive. (4) The best method of introduction is to use a proper introducing cage.

[8645] *Ownership of Swarm.*—Can I claim a swarm which settled in my neighbour's garden? I knew one of my stocks was very strong, and seeing the swarm hanging in the neighbour's garden, I immediately went to my hives and found this strong hive denuded of bees. On opening same, could find no queen, but several capped queen-cells. One can hardly sit and watch one's hives all day long, and of course I did not see this particular swarm come out of the hive, but there is no one else who keeps bees within a radius of nearly two miles of mine.—A. Novice.

Reply.—Unless you actually saw the swarm issue and settle we are afraid you have no claim. Surely your neighbour will let you have it if you explain the circumstances, as no doubt from what you say, the swarm is from your hive.

[8646] *Re-queening and other Queries.*—(1).—I have a queen in her third year, which was received with a last year's swarm, and as she is laying exceptionally well, I thought I would leave her till next year, when I hope to raise a nucleus. I should like to know what would happen. Firstly, if she was to die in the summer, would the bees raise a new queen, or would I have to purchase one? Secondly, if she was to die in the winter or spring, when the bees are hibernating, what should I do? (2) Looking at my bees the other day I saw three queen-cells being made, and after the new queen emerges with her swarm, do I understand from the text books that I am to cut out the other two queen-cells with a view to preventing casts, seeing that I have no nuclei to place them in. (3) I have made a spare hive, and transferred my bees into it as per text book, but I find that the newly-painted alighting-board, especially in the early mornings when the dew is on, becomes more or less sticky, though the paint is absolutely dry and hard, and any bee that happens to fall on its back has great difficulty in righting itself. Would varnish or flatted oil colours improve matters? (4) Having become very interested in the anatomy of the bee and its diseases after reading the various articles in "B.B.J.," I thought I would be on the look out for a second-hand microscope, which would enable me to study the spiracles and other parts of the bee's anatomy, also the spores, &c., of "Isle of Wight" disease, and should be glad if you could inform me what magnification I would require for such work.—G. J., Llanberis.

Reply.—(1) You had better make a nucleus now to rear a queen, and at the end of the season kill the old queen and unite the nucleus to the stock. If the queen died in the summer the bees would rear another. If she died in the winter the bees would gradually dwindle away in the early part of the year. (2) The old queen heads a first swarm, which issues before the young queen is hatched. You

could cut out all the queen-cells but one after the swarm has issued to prevent a cast; usually there is no need to do this. A better plan would be to hive the swarm in a new hive on the old stand, putting the supers on it. The old stock is put in another position, as bees locate the position and not the hive the old stock would be depleted of all the flying bees, and there would be no danger of a cast coming off. (3) The newness will soon wear off, and the trouble disappear. Varnish or paint would only prolong the trouble. When newly painted it is well to scatter a little sand on the alighting-board; this does away with any stickiness, such as you describe, and affords a foothold for the bees. (4) You can see most of the parts of the anatomy with a 1in. objective. For bacteria you will require a $\frac{1}{12}$ oil immersion lens, which is very expensive; also the culture and preparation of bacteria is a long and tedious process.

BEES IN EAST AFRICA.

[The following interesting article on bees in East Africa, was specially written for the BRITISH BEE JOURNAL by a correspondent who is one of the British East African Game Rangers. He has, therefore, had a unique opportunity of observing the native bee-keepers, during his travels on official business.]

Bees, bee-keeping, and honey enter very largely into the lives of all East African tribes, some even, such as the Wa Ndorobo or Ogick, depending mainly on honey, wild and cultivated, for their food.

The methods employed by the various tribes to obtain honey are similar, and may be divided into (1) the keeping of apiaries and (2) the collection of wild nests.

(1) The hives employed by most tribes are similar in shape and appearance, but various kinds of wood are used, and each tribe has different forms of alighting boards, end pieces, weather protectors, and ingress holes.

The usual form of beehive is a log, which is first split and then hollowed out. The ends may be left intact or new circular pieces fitted; a sheet of bark is employed by the natives living in the high wet forests as roofing. The hive is then either placed in the fork of a tree, or, where honey-eating animals are numerous, suspended by a double-hooked stick attached to a liana bound round the bee tub and the other hook hitched on to a branch. This system is said to prevent the ratel or honey badger (*Mellivora ratel*) from getting at the hives.

Many authorities have stated that the honey badger cannot climb, but the Ogick affirm that it can, and are very emphatic on this point. The writer has seen marks on cedar trees which were stated by this tribe to be ratel claw marks. The spoor of the ratel was found at the base of the tree, and, on a ratel being procured, it was found to climb a fair-sized tree with ease.

Briefly summarising the various East African bee-keeping tribes, they include (1) the Wa Ndorobo or Ogick, (2) the Wakamba, (3) the Kikuyu, (4) the Wa Teita and Wa Taveta, and perhaps the Walungulu, (5) the Dholuo Kavirondo, (6) the Kitosh, (7) the Nandi, (8) the various Elgon and allied tribes living along the Kamasia escarpement and Sulo hills.

The Masai do not keep beehives, but buy honey from neighbouring tribes, though they greedily eat wild honey when they can get it.

(1) The Wa Ndorobo, or Ogick, live to a very great extent on honey, men, women, children, and dogs. Each family has a certain area of forest, which they consider their own, and keep their hives strictly in this part. All wild honey belongs to the owner of this section of the forest, and trespass is dealt with severely. This tribe, in common with many others in East Africa, consider the theft of a honey barrel a far more serious crime than murder. Homicide by tribal law may be compounded, but the penalty meted to a robber of honey-pots is death, usually in the form of a poisoned arrow fired into the robber by the aggrieved party from some ambush. The arrow poison used is from the *Acocantherus schimperi* tree, and, if fresh, is invariably fatal.

The Ndorobo hive is of two forms—one the hollowed hinged tree trunk, protected by a sheet of cedar bark, with an orifice below to assist in the extraction of honey, and the other a hollow cylinder of wood, usually a gouged-out trunk of podocarpus, with a circular piece of wood, bored with ingress holes, at each end. This is also covered with cedar bark. The hives are placed in a special kind of tree, looking something like a large wild olive, and importance is attached to the fact that the hive must receive direct sunlight in the morning. This is probably due to the fact that the night and early morning temperature in the high forests where the Ogick live is very low. The altitude of the forests is usually from 7,000ft. to 10,000ft.

When a new honey barrel is completed it has a lucky spell cast on it by its owner, or some person of authority, and some honey is placed inside to attract a swarm of bees. New hives are usually placed out at the end of the rains. On a swarm of bees taking possession, the owner waits till he considers the hive ready, and then,

putting his only garment, a fur cape, over his head, like a cowl, and taking a few smouldering stocks with him, he ascends the tree and extracts the honey in handfuls and places it in a skin bag. No attention is paid to stings, except afterwards to pick them out, but they do not like their eyes getting stung. The idea of putting the cape over the head is to obviate this. A man's arm may be seen almost "furred" with stings, but no ill-effects are observed.

The hive is then left *in situ*. The honey is eaten or sold to other tribes (in times of plenty) for the purpose of making an intoxicating drink.

The Ogick are gifted with very clear sight, and will see bees "working" at almost incredible distances up some of the gigantic trees. They are always on the search for wild honey, and they are much helped by the indicator bird. On a wild nest being found, it is chopped or dug out in the usual fashion, but everything is taken. A comb containing grubs is much preferred to that containing honey, and this brood comb is always greedily eaten.

A reward is always placed for the indicator bird when it has been of service. The legend is that, if the bird is not rewarded, the next person who follows it will be led up to a lion, rhinoceros, or python, to the detriment of the honey-seeker. There may be no truth in this, but the writer has twice been taken up to a rhinoceros by the bird, who then departed, as did both the "rhino" and the writer.

The natives present were very emphatic on the reason for the bird's so doing, but, of course, the "rhino" may have been accidentally asleep in that spot, and there may have been no malice prepense on the part of the bird.

(*To be continued.*)

LATEST FROM THE HIVES.

[Owing to an epidemic in the Somerset apiaries, we learn from the *Pall Mall Gazette*, human bees have to be appointed to carry pollen for the purpose of cross-fertilisation. Otherwise there would be a shortage of cider in Somerset this year.]

The announcement of the employment of "human bees" in Somerset may give relief to the anxious minds of the cider manufacturers, but it has caused consternation in other quarters. The remarkable intelligence of the bee has by some subtle means communicated to hives all over the country the fact of this introduction of blackleg labour, and these resorts of our most industrious insect are simply buzzing with excitement. Naturally there is a great deal of anger expressed, and a new and sinister meaning has been given to the term "beeswax."

"Down honey-sacs!" is the cry of the more ardent agitators. We are privately informed that in one hive the honeycomb is being surreptitiously filled with corrosive acid. Another hive contains distinct signs of an explosion having taken place, and although no tell-tale literature has been left lying about there is little doubt that the Y.H.B.s (Young Hot-headed Bees) are responsible for this. One hive-keeper, who has a great reputation for handling his bees without being stung, was badly bitten last Sunday while entertaining a small house-party, from which it is feared that the gnats are rising in league with the bees.

Whatever sympathy we may feel for the denizens of our apiaries, we feel still more for M. Maeterlinck. He, poor man, is in despair. His publishers insist that his "Life of the Bee," in order to remain the leading authority on the subject, must now have an appendix. "I don't see how I can get this appendix into less than five volumes," he exclaimed pathetically to a friend.

The proprietor of the Somerset hive desires us to make known that he can receive no more applications for the post of drone, as that department was filled some days ago.—*Punch*.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

H. G. R. (Derby).—*Pollen-covered Bees.*—(1) The insects you thought to be wasps were bees belonging to the hive, whose bodies had become dusted all over with yellow pollen. (2) The protruding cells are drone-cells.

W. C. S. (Hemyock).—*Wild Bees.*—The bees are a species of *Andrena* common in this country.

W. T. F. (Shipley).—*For Preventing Bee-stings.*—The recipe given in "B.B.J.," to which you refer, is as follows:—Melt in a vessel surrounded by hot water, 200 parts by weight of lard and 100 parts of beeswax. When dissolved, remove from the fire and add 5 parts of liquid formol, and 50 parts of essence of eucalyptus or balm. Thoroughly mix.

This should be rubbed on the face and hands, and will prevent stings of bees and mosquitos.

SUFFOLK.—*Bees with torn wings.—Bee-parasites.*—(1) The torn wings show that the bees have been fighting: probably the other stocks have attempted to rob this hive. (2) The small insects are *braula cæca*, or blind louse. Though not absolutely injurious, they irritate the bees considerably. A little tobacco smoke puffed into the hive will cause them to drop from the bees on to the floor-board: they can then be swept off and the floor-board washed with a disinfectant to cleanse it.

T. H. (Enniskillen).—*Making an Extractor.*—Any appliance manufacturer could supply you with the gear, but we cannot state the cost of same.

Suspected Disease.

E. H. W. (Stoke Pogis).—We find no disease in bees sent.

J. B. (Stonehaven).—There are distinct traces of "Isle of Wight" disease in the bees.

G. R. (Loch Fyne).—There is nothing wrong with the sample of comb; no trace of moth or disease.

Z. Y. X.—(1) Yes. We should advise you to destroy the stocks. (2) Formaldehyde will not cure it.

STIRLING.—The bees have died from "Isle of Wight" disease.

G. P. G. (Leicestershire).—We do not find any trace of disease in the bees sent.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.
Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

TWO STRONG NATURAL SWARMS English bees, guaranteed healthy, 12s. 6d. each.—EAYRS, Dunstable.

SIX HEALTHY HIVES, good condition, 3s. 6d. each; fourteen section racks, 9d. each; geared extractor, 18s. 6d., owner removing and giving up.—BOWDEN, Broomhill, Witley, Surrey. v 59

STRONG, HEALTHY STOCKS, on ten frames, young queens, 30s; boxes, 4s. 6d., returnable.—C. WEAVER PRICE, Ashgrove, Brecon. v 50

WANTED, twenty-four sections free honey.—WILDER, 18, Harvist-road, Brondesbury, N.W. v 43

CLEAN shallow super combs, 3s. dozen; W.B.C. section racks, nearly new, 1s. 6d. each; new W.B.C. racks 3s.; good secondhand hives, new frames, excluder, rack, complete, 5 6; large new rapid feeder, 2s. 6d.; Valcun fruit bottling outfit, new, complete quantity bottles, 12s. 6d.; open top straw hive, complete with super, floor, stand, cover, 3s. 6d.—R. JOHNSON, Little Hinton, Swindon.

WHAT OFFERS?—Bee book, Simmons's "Modern Bee Farm," Dzierzon's "Rational Bee-keeping," Hutchinson's "Advanced Bee Culture"; borage plants, 2d. per score.—STEVENS, Churchill, Oxfordshire. v 54

TAYLOR'S HONEY EXTRACTOR, only used twice, 17s. 6d.; thirteen bar-framed standard hives, splendid condition, crates, excluders, &c., for same, smoker, and other appliances, 30s., 44-lot, owner going to Australia.—WILES, Haynes, Bedford. v 55

TWO single-walled hives, 2 racks sections each, good condition, painted, 16/- lot.—JULIAN LOCKWOOD, Hunstanton. v 53

TWO grand month old laying queens, 4s. 6d. each.—OWEN, Liberal Club, Cheltenham. v 52

GUARANTEED HEALTHY SWARMS, 3s. per lb., or 15s. per swarm, carriage forward, box returnable.—DENNIS, Brownsover, Rugby. v 49

THE last pen this season; exchange for good stock bees, or two swarms, or 25s., seven pullets and good cockerel White Wyandottes.—AVERY, Deverill, Warminster. v 51

A FEW SWARMS, 15s., on rail.—CHAPMAN, Chelston Cottage, Bodmin, Cornwall. v 47

STRONG, HEALTHY STOCKS, with 1912 queens, 2s. 6d. per frame, good hives included, never been doctored; also appliances.—MILES, 174, Mere-rd, Leicester. v 46

WANTED, immediately, Sladen's British Golden Queens, fertile; also secondhand extractor.—CLARKE, Vicarage, High Wycombe. v 45

FOR SALE, 2 to 3cwt. of fine quality honey, in large travelling cans, 7d. per lb.—JOBSON, Cornish Hall End, Braintree. v 48

GEARED EXTRACTOR, almost new, with cover, 15s.—PARK, 34, Newton-street, GREENOCK. v 44

SWARMS during June, 14s., from bar frame hives, cash with order, guaranteed healthy; stamp for reply.—J. REAVELEY, Starbeck. v 24

GUARANTEED strong healthy swarms, 10s. each, or 2s. 6s. lb., cash with order.—WHITTING, Manea. v 19

FOR SALE, eight W.B.C. hives, complete, new 1911, painted three coats, calico covered roof, 12s. 6d. each. £4 10s. the lot.—S. MATTHEWS, Station-road, Port Talbot. v 17

CONQUEROR HIVES.—Double, single, supers, appliances, cheap; state requirements.—HULBERT, Hermitage, Worcester. v 4

COMPLETE volumes of "Gleanings," unbound, for 1908, 1909 and 1912, price 3s. 6d. each, post free.—MANAGER, "B.B.J." Office, 23, Bedford-street, Strand, W.C.

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

36TH SEASON.—ENOCH WOODHAM, Claverling, Newport, Essex.—Prolific hardy queens, British, 4s. 6d.; hybrid, 5s.; imported Italian, 6s.; swarms as heretofore; Rhode Island Red fowls.

SNELGROVE'S 1913 fertile queens, 4s. 6d.; Snelgrove's "Re-queening," 6½d.—14, Albert Quadrant, Weston-super-Mare. v 57

STRONG, HEALTHY, NATURAL SWARMS, daily, 15s. each; also nucleus and queens; prices on application.—WOOD, Ash Grove, Bishopton, Ripon. v 58

Editorial, Notices, &c.

SHROPSHIRE B.K.A.

A special meeting of the above Association was held in Shrewsbury on May 17th for the purpose of considering what course should be taken with regard to the annual exhibition. Mr. Roff King (chairman of the committee) presided, and other officials present were Mr. R. Holland (treasurer), and Mr. S. Cartwright (hon. sec.).

It had been previously intimated that the Horticultural Society, who had for several years given a handsome donation towards the Honey Exhibition connected with the August Floral Fete, would this year discontinue such financial assistance, and considerable disappointment was expressed at that decision.

It was understood that the Society was revising its expenditure, and the donation to the honey show was one of the items which had been cut out.

There was a unanimous desire at the meeting that the annual show of honey should be continued, but it was recognised that it would not be possible to hold it on so large a scale as it hitherto had been, now that the grant had been withdrawn. After some discussion, it was decided to hold a show on a smaller scale, in some prominent place, on the same days as those on which the Floral Fête will be held, the details being left in the hands of a committee. It was incidentally pointed out that the past exhibitions had better enabled the cottagers to dispose of their honey than anything else could possibly have done.—*Communicated.*

NEW B.K.A. FOR RICHMOND AND DISTRICT.

A meeting of gentlemen interested in bee-keeping was held on May 29th, at the residence of Mr. F. Attwood, Leyborne Lodge, Leyborne Park, Kew Gardens, with the object of forming a Bee-keepers' Association for the district. Mr. Attwood was elected to the chair.

In a statement made by the Chairman, it transpired that the meeting had been called at the suggestion of a few bee-keepers in the district, and one of their objects was to take steps to guard against the "Isle of Wight" disease, and to assist each other as bee-keepers.

On the motion of Mr. Romer, seconded by Mr. Taylor, it was agreed to form an association for Richmond and district, and that its object be mutual help and intercourse for bee-keepers. The subscription will be 2s. 6d. a year.

Mr. J. Romer was elected hon. secretary pro tem., and it was decided that Mr. G. Cave, M.P., be invited to accept the presidency for the first year.—*Communicated.*

A STEP IN THE RIGHT DIRECTION.

The committee of the St. Andrew's Training College for Teachers have decided to make bee-keeping part of the teachers' training, and have established an apiary in the College gardens, near Dundee, for this purpose. Classes are being conducted for first year and second year's students, and arrangements are being made for a course for country teachers. Mr. R. Steele, lecturer to the Edinburgh and East of Scotland Agricultural College, has been appointed instructor.

AMONG THE BEES.

By D. M. Macdonald, Banff.

ARTIFICIAL INCREASE.

This spring saw quite a number of empty hives owing to the almost unprecedentedly bad season last year, and natural swarming will not be able to make up the deficiency. Therefore, where it is desired to increase the number of occupied hives, artificial swarming had better be resorted to. Where the home apiary is still healthy, no better or safer means can be relied on. It is inadvisable to begin this system of increase at too early a period, because one of the prime requisites, a hive almost boiling over with bees, cannot be obtained until the season is well forward. It is even worse to delay until the season has pretty well run out, because then there is not time for the two stocks to work up into such numbers as would justify their separate existence through the trying winter to follow. Early July, or late June, unless in the South, is therefore a good intermediate period, not too early and not too late in the bee season. The weather should be settled and warm, a good flow should be available, and the hive to be divided should contain a very strong population. Choose the early hours of a fine day, when field work is being actively carried on—just such a day as you would look for the issuing of a natural swarm. In making artificial increase one of the greatest difficulties we have to encounter is to get bees to remain on the chosen site. One has not to be long a bee-keeper to discover that for the bee there is a glamour about the spot where first it encountered the sweet breath of the pure air of heaven, uncharged by any of the gases peculiar to any narrow space, as the hive interior, populated by teeming thousands. In other words, "Home, Sweet Home!" is a favourite air of the bee. Transplanting a hive to a new site does not suit the well regulated ideas of its denizens,

however fair or well sheltered the new location may be. Whenever the field bees again fly to the reaches of white clover, lime blossom, or purple heather, back they come straight and unerringly to the spot they have been accustomed to consider the dearest on earth, because it bears the magic name of home. Nay, shift their residence three, two, or even one foot to either side of the former stand, and you cause the home-coming foragers untold misery and heart-rending confusion. Aimlessly they fly about for a long time, bewildered by the cataclysm that has overtaken their domicile. To obtain success in making artificial increase this singular peculiarity must be duly taken into account, and our treatment must overcome the difficulty.

Several plans may be given to accomplish this purpose effectively. Where one has an out-apiary, and this for many reasons is a very desirable desideratum nowadays, bees can be transported thither, and they will stay where put, a very important fact for the man desiring increase. In the home apiary, bees in a "Claustral" hive can be so dealt with that they will lose the sense of the old location and adopt a new one; with the probability that an artificial swarm may be planted down anywhere safely. A modified form of claustration is practised when a nucleus is provided with bees from anywhere, and forcibly confined in the new hive for two or three days. Pack the entrance with green moss fairly tight in order that they may have some work and worry in eating their way out in the time named. There is something about this patient toilsome and prolonged effort to obtain means of egress, which forces them to spot the new location.

Shake bees from anywhere by means of a funnel into a well-ventilated box, and carry that to a dark shed or cellar, leaving them alone there for a few hours until they realise that they are queenless, when they will set up a wail or peculiar cry, after which a queen may be thrown in anyhow, and readily accepted. In about twenty-four hours these bees may be treated like a swarm, and will unquestioningly accept their new home wherever it may be planted down. Leave a number of frames of brood leaning up against the flight board of various hives for a short time. Old bees will return home, but lately hatched ones will stay with the brood. Take some of these combs for your nucleus hive, and they will not desert. Shake the bees from a second set of three into your new hive and thus secure a sufficient number. Watch that no injury accrues to brood or combs if the day is warm during the time they are exposed.

A system of artificial swarming well spoken of in America, but little known or practised in our country, is that known as shaken or brushed swarms. Our cousins euphoniously designate it "shook" swarming. The procedure is simple. Some time in anticipation of the date when the swarming fever is naturally likely to seize on the bees, place a new hive on the old stand fitted with full sheets of foundation, or with fully drawn-out comb if on hand (some favour starters only), then shake or brush almost all the bees on to a temporary platform in front of the new hive, allowing all to run in. The shaken bees and the field ones combined will form the swarm. They will soon establish themselves in the new empty brood body, where the queen will have ample room for her egg-laying powers and the bees ample scope for comb-building. All super chambers are transferred above the new set of frames. The operation must not be performed before the honey season is on, but too late proceedings will make the whole procedure futile. A good deal depends on seizing the auspicious moment, and the best results follow when the process of natural swarming is imitated as closely as possible. Although the primary object is to keep the full force undivided on the old stand, while the chief flow continues, we have, too, an equivalent of swarming, as the removed combs, in all probability, or mass of brood, may be utilised to make increase. The beauty of the operation lies in the fact that it saves all watching for swarms, so that we have no runaways, while we ourselves can choose the time when the process may be carried out. Further plans of increase will be given in next contribution.

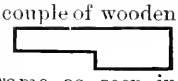
HELPFUL HINTS FOR NOVICES.

By W. Herrod.

FITTING AND WIRING FRAMES.

(*Continued from page* 224.)

The frame is fastened in the vice with the top bar downwards, as the bottom bar is not strong enough to stand the strain; or, failing a vice, a couple of wooden buttons can be made to screw on to the bench,



so that they hold the frame as seen in Fig. 8, by turning the open portion of each in opposite directions.

Put the loop on the wire over the top left-hand nail (Fig. 8), pass it over the right top one down over bottom, right across to and over bottom left, up to and over top left hook, Fig. 9. Pass the wire under the bottom one and up over right top hook, put the middle finger of the left hand to the cross in the wire with the thumb on the bottom bar, so that the cross wires can be kept in the centre and lifted up, while with the right hand the wire is pulled down (Fig. 10), making the latter

tight throughout, so that it gives a note like the string of a fiddle when clicked with the finger-nail. Wrap neatly round the two wires at top right-hand (not round the nail) about six times, and break off the wire quite close to the nail by holding the end of the wire and twisting

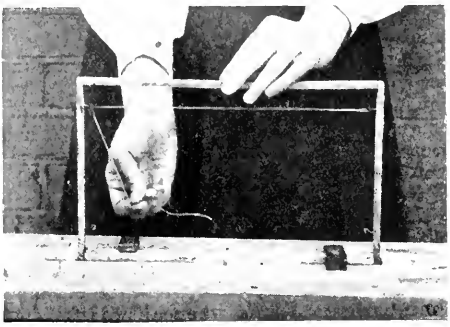


FIG. 8.

it round and round until it breaks (Fig. 11). This avoids leaving an end protruding, which would irritate the bees. The important thing is to keep the wire quite tight throughout the operation.

The best frame to use is that with a plain top bar, as it is much stronger than the one with a saw cut, neither does it provide a harbour for the larva of the wax moth, as does the latter; it is easier to fit the foundation in when the right way is known, also when it is necessary to

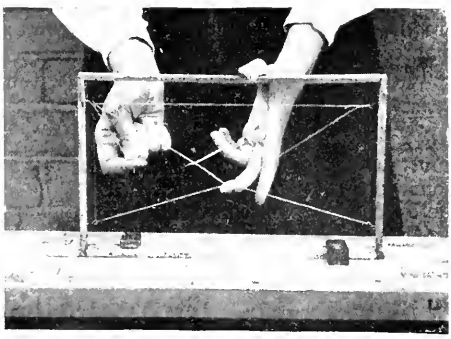


FIG. 10.

cut out combs to be replaced with foundation there is no trouble in removing the wax from the saw cut.

(To be continued.)

"ISLE OF WIGHT" DISEASE.

THE "KENTISH" CURE.

Every effort to find a remedy for this mysterious disease is commendable, and it is satisfactory to know that many busy men are unselfishly devoting some of their time to help their fellow craftsmen. Amongst these we must number Mr. H. Wigley, of Gravesend, in whose garden the Junior Editor had the pleasure of lecturing and demonstrating for that progressive Association, "The Crayford and District," on Saturday, May 31st. The hives are kept

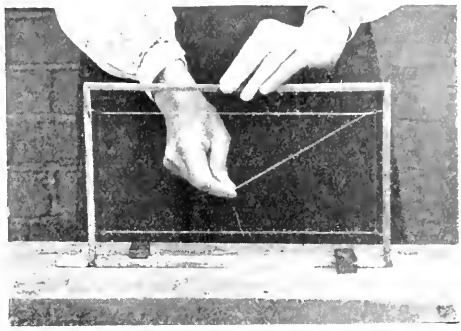


FIG. 9.

in an excellent manner, and there was ample evidence that Mr. Wigley spends a great deal of his spare time amongst his bees. We also noticed one good point about the hives, *i.e.*, an extra chamber below the brood nest with the end left out. The opening is covered with perforated zinc, so that ample ventilation is provided in the summer to prevent swarming.

Mr. Wigley has been experimenting with a view to finding a cure for the "Isle of Wight" disease, and from what we saw,

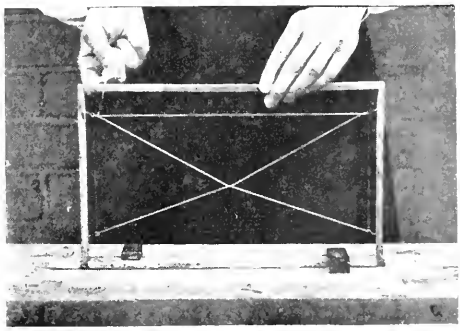


FIG. 11.

and what he told us, he has met with a fair measure of success.

The bees are mostly Carniolan, and though by some it is claimed that these bees are immune from disease, our experience is to the contrary.

We leave Mr. Wigley to give his method of treatment and the results in his own words as follows:—

I have pleasure in giving a summary of the result mentioned in my letter to the "B.B.J." (page 164), April 24th last.

Out of ten stocks packed up for winter, I have lost five; three wintered on natural stores, and two on half medicated and half honey. Five (four Carniolan and one English) have survived on medicated stores solely. These are now strong and vigorous, are working well, have thrown two good swarms, and beyond an occasional crawler, show no symptoms of disease. There is about one cwt. of honey in the supers, and the brood nests are teeming with young bees. The treatment described below checks the development of the parasite within the bee, while at the same time it increases the bee's power of resistance.

Specific Treatment.—The parasite is attacked in its amœboid stage within the digestive tract of the bee with sulphate of quinine. This, apart from its tonic action, is a strong germicide in acid solution. It is administered through syrup, candy, and water.

Syrup.—Dissolve 60 grains of the sulphate in ½oz. of water containing two drops of sulphuric acid. Add this to every gallon of syrup used.

Candy.—60 grains of the powder per 5lbs. of sugar are stirred into the hot syrup when the crystallisation point is reached, and allowed to cool and set as for ordinary candy.

Water.—10 grains, dissolved with a trace of sulphuric acid, are used with every quart of drinking water.

Subsidiary Treatment.—Rehive all infected stocks in clean, well disinfected hives. The alighting board and entrance should be kept clean; keep the ground for a few yards round the hive covered with a layer of sawdust, and water this weekly with a disinfectant solution (*e.g.*, *Cyllin*), with a sprinkling of fresh sawdust. The hives should be well ventilated by a floorboard ventilator, or a "back door." Where necessary, natural stores should be removed from the brood chamber and the medicated syrup supplied instead.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

A SUPERFLUITY OF QUEENS.

[8736] On Sunday morning, June 1st, at nine o'clock, as I was returning from the early service, I found my bees swarming. I will not enter into the familiar details of the process of hiving the swarm, though this was attended with some difficulty, as the bees had settled high up in the small trees which topped this deep Devonshire lane. I desire rather to record, as briefly as possible, the rare conditions which revealed themselves in the swarm itself, and, subsequently in the parent hive. Twice, after I had shaken the bees into the skep, they returned to the branch where they originally clustered; and even when I had secured the majority a small number remained there. I then cut down the branch, and eventually took the skep back into my garden close at hand and immediately hived the bees most successfully. From the action of the swarm, I had been led to suspect the presence of more than one queen, and when all was finished I actually found one resting on the floor of my study, close by the open French window. This I put into the parent hive. Yesterday morning, June 2nd, at ten o'clock, a second swarm issued from the same hive, which I successfully secured in the skep and placed between the parent hive and that occupied by the first swarm. In the afternoon, a bee expert from Messrs. Burgess and Son, of Exeter, came and examined the hives, and, to our surprise, we found a quite abnormal state of affairs in the parent stock. I am only an enthusiastic amateur, and am glad that he was present to vouch for what I now state. We found six young queens peacefully moving amongst the bees, hardly any brood, the body of the hive being filled with unsealed honey where the young bees had hatched out. We cut out all the queen-cells, ten in number, and then prepared to put the second swarm into the same hive with the first, as, on examination, we found no trace of a queen. All went well, and we saw her majesty enter the hive and heard the ovation with which the bees received her. As a climax to the whole amazing incident, I found two more queens in the skep which had contained the swarm. I shall be glad to have your comments on what I imagine is a very rare, if not unprecedented experience. I am a constant reader of your most interesting and instructive journal. P.S.—The honey-flow is good and the bees are doing grandly.—A Bee-lover, Teignmouth.

[You certainly had an unusual experience. The stock evidently reared a number of queens, and these were allowed to emerge, which accounts for the abnormal state of affairs. No doubt one had settled upon you during the process of hiving, and this dropped off in your study. Occasionally virgins will issue with a swarm as well as the old queen, but the occurrence is rare.—Eds.]

HOW HUMBLE BEES COLLECT POLLEN.

[8737] I enclose a sketch of a small black humble bee which rather interested me in my garden. It was working on some cabbage blossom, gathering nectar and pollen; it hovered considerably, and whilst doing so, repeatedly brushed the pollen from its long tongue and transferred it to its corbiculæ. Then

it flew to a neighbouring gooseberry bush and clung by its mandibles to the stem, with its body standing out at right angles and its legs free, cleansed its body of pollen and packed it away in its baskets. It then flew straight away, probably homewards. This, I think, must be worthy of note. May not our bees do the same?—F. W. Harper, Watford.

PREVENTING DISEASE.

[8738] I have been a reader of your valuable paper for several years, and a successful bee-keeper, too, as you can judge by the amount of honey I have taken from my fifteen stocks in frame hives for the last two years. In 1911, I secured over half a ton, and in 1912 about nine cwts. of honey.

This year, through "Isle of Wight" disease, I have lost the whole of my stocks, and visiting the many bee-keepers in my own village I soon found that I was not alone in misfortune. I could not find a single stock alive, and in the next village a bee-keeper, who had about thirty stocks, has lost all through the same pest.

The date of my visit was the last week in April. I made several other calls as I went along, and I found all in the same boat, until I came to the apiary of Mr. James Lee, of Fulbourne, who kindly allowed me to accompany him over his large apiary. There was no trace of disease, and all stocks looked in fine condition. On asking him how he, though only a few miles away from an affected district, should have escaped from the disease, he informed me what he had done and what he is still doing to keep away the pest.

Mr. Lee and one assistant had just started the work of transferring, and as I watched them transfer four stocks into clean hives, I saw no less than six to eight frames in each hive full of sealed brood, and others full of grubs and eggs. Another helper was taking away the hives from which the stocks had been removed, and giving them a thorough cleansing and disinfecting, although they looked to me quite clean. He was scorching the insides of all the hives, and afterwards applying Ayles' Cure. I am thoroughly convinced that had I treated my hives *in time* in this way the result would have been the same with me.—Victor A. George, Cambs.

FRUIT SPRAYING AND BEES.

[8739] In reply to Mr. J. N. Kidd's letter in the "B.B.J.," June 5th, I should just like to give my opinion on the cause of the so-called "Isle of Wight" disease. In reply to his first question I can state honestly that I believe it is not infectious, and I contend that the disease is brought to a hive through bees gathering honey and pollen from fruit trees that have been sprayed with insect killer, which all fruit-tree rearers instil into one that one must buy to stop the insects eating the buds and stalks of young fruit. This preparation is most deadly to all insect life, including bees. The bees eat the poison when they are out gathering nectar, the result is they come home in a dying state; some manage to get into the hive only to come out and die.

I have spent some time and money in studying this very thing. I first noticed the disease when I kept bees near a large fruit nursery. I told one of the gardeners about it, and he said to me: "We have been spraying our trees for filth." I removed from that place to where there was nothing but clover and heather. The result was no spring dwindling and a good harvest. I think you will find more disease in the fruit districts than anywhere else.—A Ten Years' Reader of the "B.B.J.," Sheffield.

[It is well known that bees are sometimes poisoned by insect-killer, but this only happens when the spraying is done while the fruit trees are in bloom; "Isle of Wight" disease, unfortunately, is known in districts where no spraying whatever is done.—Eds.]

A PLEA FOR THE SKEP.

[8740] In looking over my old Bee Journals, in the issue for February 15th (page 62) last year, I notice Mr. Macdonald calls the skep a "sealed book." Though such a domicile is unknown, in the next sentence he explains all about it, naming its bad qualities and the hindrance and harm it does to bee-keeping. If Mr. Macdonald does not like the old skep, no one will try to make him. I should fancy he has never worked with them much, as

he says the skep is a sealed book to its owner, and though I am sorry it annoys him, I advise him to let it alone, as no one would try to force it on him. He would wipe it out if he could, and if it is as bad as he makes out, it would be a good thing to do away with it. Let me remind Mr. Macdonald that a thing must be very bad indeed which has no good qualities, and that a very good thing that has no bad ones. I have kept straw skeps for sixty years and have never been without some in my apiary, and if I could live sixty more I would still keep some skeps. I have done well with them. I took first prize at the first show at the Crystal Palace in 1874 with honey from straw skeps; I took first and second at Kensington Show for the best super in the show—the super was presented to Miss (The Baroness) Burdett-Coutts, President of the B.B.K.A.—and many other prizes at later shows for supers, and these were worked on straw skeps. I was awarded first prize for sections at Kensington Show and was winner of over £13 in prizes, and a great part of the honey was from straw skeps. Reference to back numbers of JOURNALS will prove this. At Windsor (it was only a middling year) I exhibited there, and also entered the driving competition, and we competitors were asked if we had any remarks to make. We were in the tent, I remember it well, the flag was flying on the top of the tent and the old straw skep (the symbol upon it) fluttered in the breeze. I said I was glad to see that they still had a place for the skep, and probably most of the honey that took prizes was worked on skeps—as the greater part of the honey came from a neighbour of mine. My remarks evidently did not please, and the result was I received a letter from the Society to the effect that if I ever made any more remarks similar to those I made at Windsor, I should be debarred from showing any more in the county of Berks. I have been careful since.

But to return to the skep. If it is a sealed book Mr. Macdonald must have guessed at his assertions. The skep is wrongly blamed for many things. This ought not to be, as it has its place. I know a man who took £6 worth of honey from three skeps, old stock swarms and cast. I could give you other cases if this is published in the JOURNAL.—W. MARTIN, An old Cottager Bee-keeper.

Queries and Replies.

[8647] *A Bee Superstition.*—I had a swarm on June 2nd, which clustered on *dead* wood. I have heard it said such swarms are useless, is that so? If this is true, what is the cause of it? The stock is a valuable one. I hived the swarm, but did not see the queen: what has happened to her? The stock that swarmed has two section racks on, one of which is nearly completed. As I do not want increase, how can I prevent it swarming?—A. B., Tonbridge.

REPLY.—The saying that "swarms which settle on dead wood never do any good" is one of the superstitions of bee-keeping which should be consigned to the limbo of the past. No doubt, in the first place, the saying originated to make people prune their trees and cut out all dead wood for the well-being of the trees. No doubt the queen is there, although you did not see her. Swarming can be to a great extent prevented by giving room in advance of requirements, and also providing ventilation at the bottom of the hive.

[8648] *Swarming Difficulties.* — On May 24th, at 7 a.m., a swarm issued from my one hive; I secured it about 9 a.m., in a skep, and after waiting for most of the bees to gather in the skep, I started to hive them, throwing them out on a sheet in front of the hive. The bees entered well at first, but I soon discovered that they were gathering again on the bushes where they had swarmed, about a yard from the original place. When they had clustered the second time I hived in the skep again, and again threw them out in front of the hive, but this time they would not enter, but returned straight to the place of the second clustering. I again got them in the skep before all had settled, and put the skep on the ground, and all the bees from in front of the hive soon gathered in the skep. After twenty minutes I threw them out again in front of the hive, and this time they went merrily in, moving in a great mass. (1) What was the cause of this re-clustering at the old place where they had swarmed? Was I too quick to throw them out in front of the hive, or had I failed to secure the queen twice in the skep, and got her the third time? Next time I mean to hive a swarm in the evening, as three hours wasted in the morning is too much, both for bees and master. (2) How long will bees remain in the cluster after swarming? They were seen to issue at 7 a.m., and I found them at 9 a.m., and the houses round were full of bees; scouts, I suppose, looking for a new situation. (3) The swarm now goes strong, but out of the parent hive I cut six queen-cells out of seven, leaving the most perfect one. Two days later, this cell was empty, but I have not been able to see a queen. To-day, June 4th, at noon, another swarm issued and clustered on a pear tree. After ten minutes the bees began to return to the hive again, and had soon settled down inside.

I suppose the queen did not join them, but what queen could they expect to join them? Their new one could only just be beginning to lay, and, so far as I know, she had no rivals. I suppose the conventional thing is to swarm after ten days or so, so they swarmed. If a queen is present in the hive is there any chance of their building queen-cells again, or have I done with swarming for this year?—A. N. C., Neston.

Reply.—(1) You should not have attempted to put the bees into the frame hive until the evening, as they get too excited by being thrown down in the sunshine. This was the cause of your failure. (2) A swarm has been known to remain in a cluster for three days. (3) The second swarm, or cast, no doubt, issued with the queen when she took her wedding flight; as she returned to the hive, so did the bees. Having cut out all the queen-cells but one, if this queen is lost the hive will be queenless, as they have no means of raising another queen. Should this happen a fertile queen must be bought or a comb containing eggs given from another stock.

[8649] *Transferring Bees into Movable Frame Hive.*—About twelve months ago I bought a stock of bees in a milk case; they were on five combs. I also bought a W.B.C. hive and put the case and bees inside on top of the brood-chamber. They were left untouched afterwards until to-day (June 5), when I found, on opening the hive, that the brood-chamber was exactly as I left it. The foundation is untouched, and all work is going on in the milk case above. I took the latter off the top and placed a queen excluder over the top of the brood-chamber, but my long search for the queen was in vain; so I had to put the milk case back again, greatly disappointed. In searching for the queen I broke the old combs; there is a lot of brood in them, so I have left them in the box. What had I better do? The bees are strong and healthy, and I want to put them in proper order.—"Winged God," Glamorgan.

Reply.—You should have left the bees alone until they worked down into the brood-chamber of the W.B.C. hive, which they would have done as soon as they were strong enough. We do not understand why you put the excluder over the brood-chamber, as the queen would be in the milk case with the brood. You had better let the case remain over the brood-chamber (without the excluder) until the bees have worked down; when they have done this, examine the combs in W.B.C. brood-chamber until you find the queen. You can then put the excluder over the frames and the milk case back for three weeks, at the end of which time all the brood will have hatched out, and it can be cleared with a Porter escape.

[8650] *Too many Drones.*—I purchased a stock of bees in a box about the middle of March last, which I placed on top of ten frames with foundation in a "W.B.C." hive. The bees have not yet fully drawn out the foundation. I have noticed for the last three or four weeks that from fifteen to twenty newly-hatched drones have been thrown out daily. I believe, though I am not quite *sure*, that a swarm issued from the hive a few days ago, when I was away, and it was lost. I examined the hive yesterday, drove the box and put the bees back amongst the frames. I could not see any queen, though I am a novice and *may* have not been able to distinguish her. I was, however, surprised to see such an extraordinary number of drones; the whole of the partially drawn-out frames were so covered with drones that the few workers were hardly distinguishable. There are certainly at least *four* times as many drones as workers—probably more. Would you kindly tell me what is the cause of this and what I should do?—G. F. H., Stanwell.

Reply.—The bees having built comb at their own discretion in the box have made far too many drone-cells. With the use of a frame hive and full sheets of worker base foundation this can be avoided to a great extent. All we can advise now is to wait and see what happens; no doubt there is a queen and you hived her, so that all will be well. You should have put an excluder zinc over the frames, and the box back again after driving, so that you would have obtained all the hatching bees from the box.

BEES IN EAST AFRICA.

(*Continued from page* 229.)

(2) The Wakamba are exceedingly fond of honey, both *au naturel* and in the form of honey wine. They keep a very large number of hives, so many that any tree of any size has usually a number of bee-tubs in it. The hives are generally placed in a thorn tree. They are peculiar in that they usually have the private mark or brand of the owner painted or burnt on them.

These people, in common with most East African natives, appear to be immune to bee-stings.

The best honey harvest is after the "short" rains.

The hives are usually of the hollow non-hinged pattern, with a circular piece of wood let in to the ends. Holes are bored in the end piece for the convenience of the bees.

(3) The Kikuyu hives and methods are similar to the Wakamba, though they are

not, except near Kenia, such expert apiarists.

(4) The Wa Teita and Wa Taveta, perhaps, keep more hives than any other tribe. These people will even venture right out into the Serengetti and Taru deserts to place their hives in suitable trees. A baobab tree (Mbuyu) is nearly always selected, and over twenty hives have been counted in one tree. A situation near a river is always preferred.

The Walungulu, a desert-living tribe, perhaps, rely more on wild honey, which they find by the help of the indicator bird.

(5) The Dho-luo, or Nilolic Kavirondo, keep a few bees, and are perhaps remarkable in that they often place the hive near the ground in the fence which surrounds all villages. These people also show pain on being stung by bees. An overturned beehive, whether by a cow or other animal, in a Dholuo village, is an experience not likely to be forgotten by the spectator.

(6) The Kitosh tribe keep a certain number of bees, but are constantly making up bee-hunting parties, who go off into the trans-Nyoia country for a week at a time to hunt for wild honey, which is very plentiful in that district.

(7) The Nandi are great bee-keepers, and there are certain hereditary bee masters among them who are very clever in the handing of bees. The trade is supposed to be taught by fathers to their sons.

(8) The various Elgon tribes—Sabli, Elkony, El Jeborit, Sengwerr, and the allied Hill Suk Kamasia dwellers in Kiapcheragu—all depend to a great extent on honey. Their methods are similar to the Wahdorobo, but they all search assiduously for wild honey in the thorn bush planes under Mount Elgon. Food is scarce among those people and honey is largely eaten for food.

Mention may be made of the people under Arap Sangalu, a Jeborit chief, living high up on Elgon, who live chiefly on honey and giant rats as well as the flesh of a variety of Sykes monkey.

So highly are bee-hives prized among those people that the price of a wife (*i.e.*, the price to be paid to the bride's father) is usually five established bee-hives and five goats, though this latter item may be omitted at times.

The above notes are perforce very sketchy, and at best a very rough outline of the honey-obtaining methods in vogue in East Africa. Recently an Apiarists' Society has been started in Nairobi, where bees will be scientifically hived and harvested.—C. W. W.

GLOSSARY.

Wa Ndorobo or Ogieh.	A forest tribe.
Ratel. Mellivora Ratel.	The honey badger.
Wakamba.	A tribe living between the coast and Nairobi, north of the Uganda Railway.
Kikuyu.	A tribe between Kenia and Nairobi.
Wa Teita. Wa Taveta.	Two closely allied tribes living in the Wateita hills, near Voi, and on the Lumi River, near Taveta.
Walungulu.	A hunting tribe living in the Taru and Serengetti deserts.
Dho-luo.	The Nilolic Kavirondo living between the Yala River and the Tahe shore, N. of Kisumu.
Kitosh.	A tribe living between Mt. Elgon and Mumias N. Kavirondo.
Elgon.	A big mountain north of Mumias on the E. A. and Uganda boundary.
Suk.	A tribe living N.E. of Elgon and N. of Lake Baringo.
Kamasia.	A tribe living along the western wall of the Rift Valley N.W. of Nakuru.
Masai.	A tribe living on the Central Plain. Pastoralists.
Acocantherus schimperi.	The tree from which arrow poison is prepared by nearly all tribes.
Podocarpus.	A large tree with white wood closely allied to the English Yew tree. Grows above 7,000ft. sea level.
Cedar.	The juniperus procera tree.
Indicator bird.	Cuculus Indicator Ogieh name Checheya.
Nandi.	A tribe living in the Nandi hills N. of the Uganda Railway.
Sabei, El Kony, El Geborit, Sengwerr Hill, Suk, Kiapcheragn.	Tribes on and near Elgon. Some, as the El Kony and El Geborit, are the well-known cave dwellers on Elgon.
Thorn trees.	The common thorny Acacia.
Taru and Serengetti Deserts.	Two deserts about 75-100 miles from the coast S. of the Uganda Railway.

"ISLE OF WIGHT" DISEASE.

Mr. A. H. Bowen, of Coronation Road, Cheltenham, is experimenting with a remedy for "Isle of Wight" disease, with which he has had very successful results. In order to further test the remedy in independent cases, he would like bee-keepers with infected stocks to communicate with him, enclosing stamps to cover postage, and he will send them a free sample with instructions for treatment.

BEE-KEEPING IN NEW ZEALAND.

According to the statistics just issued, compiled from the figures in the last census papers, 1911, there were in the Dominion:—Bee-keepers, 11,002; colonies

of bees, 71,584; output of honey, 1,457,272lbs.; output of wax, 28,061lbs. The output of honey and wax is given for the previous twelve months to the date on which the census was taken.

Auckland Province heads the other provinces in the extent of the industry—number of bee-keepers, 2,441; number of colonies of bees, 17,115; honey produced, 399,703lbs.; beeswax produced, 9,022lbs.

Canterbury, with the exception of honey, comes next:—Bee-keepers, 2,351; colonies of bees, 15,014; honey produced, 237,884lbs.; beeswax produced, 5,807lbs.

Wellington: Bee-keepers, 1,561; colonies of bees, 13,278; honey produced, 358,710lbs.; beeswax produced, 4,436lbs.

Otago, Taranaki, Southland, Nelson, Hawke's Bay, Marlborough, and Westland, follow in that order. Number of apiaries visited by the inspector during the twelve months, 2,181, containing 31,736 colonies of bees. Number of colonies found infected with disease, 3,027; number destroyed by order of inspector, 840.—*Auckland Weekly News.*

Bee Shows to Come.

June 10 to 13, at Windsor.—Honey Show of the Berkshire Bee-Keepers' Association, in connection with the "Royal Counties" Show. Liberal prizes. Schedules from D. W. Bishop Ackerman, 161, King's-road, Reading.

June 11 and 12, at Braintree.—The Essex B.K.A. Annual Show, in connection with the Agricultural Society's Show. Open classes. Mr. W. Herrod will judge exhibits, and lecture in Bee Tent both days of show. Schedules from Mr. T. E. Lennox-Brown, Eagle House, Little Coggeshall, Essex.

June 25, at Richmond, Surrey.—Honey Show, in connection with the Richmond Horticultural Society's Annual Flower Show, in the Old Deer Park, Richmond. Open classes for amateurs. Special prizes for Honey and Wax. Apply to W. Cook, Hon. Sec., Holmesley House, Sheen-road, Richmond.

July 1 to 5, at Bristol.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. **Entries closed.**

July 17 and 18, at Lincoln.—Lincolnshire Agricultural Society's Show. Honey section, under the management of Lincs. Bee-keepers' Association. Prizes value £30. Open classes for Appliances, Observatory Hives, Extracted Honey, and Sections. Schedules from J. H. Hadfield, hon. sec., Alford, Lincs. **Entries close June 14.**

July 23 and 24, at Cardiff.—Glamorgan Bee-Keepers' Association, in connection with the Cardiff and County Horticultural Society's Show. Open classes for collection, sections, &c. Schedules from W. J. Wiltshire, Maindy School, Cardiff. **Entries close July 17th.**

July 23rd and 24th, at Wolverhampton.—Staffordshire Agricultural Society's Show. Bee and Honey section under the direction of the Staffordshire Beekeepers' Association. Open classes for appliances, observatory hives, extracted honey, and sections. Schedules and entry forms from C. R. Forse, Hon. Sec., Trentham, Stoke-on-Trent. **Entries close July 5th.**

July 23, 24, and 25, at York.—Show of Hives, Honey, &c., in connection with the Yorkshire Agricultural Society's Show. Liberal prize list. Schedules and particulars from J. Maughan, secretary, Blake-street, York.

August 6th, at Stoke Park, Guildford.—Annual Exhibition of Bees, Wax, Appliances, &c., will be held by the Surrey B.K.A., in connection with the Guildford and West Surrey Agricultural Association. Nineteen classes (five open to all). Many medals. Schedules from F. B. White, hon. secretary, Marden House, Redhill, Surrey. **Entries close July 26th.**

Aug. 7th, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Three open classes; one for single 1lb. jar of honey (entry free). Schedules from G. Richings, 2, Shrubbery-terrace, Worcester.—**Entries close Aug. 2nd.**

August 7th, at Bruton. The Annual Show of the Somerset Bee-Keepers' Association, in connection with the Bruton Flower Show. Open classes. Schedules from Mr. R. Litman, South-street, Castle Cary, Somerset. **Entries close August 2nd.**

TRADE CATALOGUE RECEIVED.

Messrs. Meadham and Sons, Bee Appliance Works, near Hereford, and 54, Stanhope Street, Hereford. This old-established firm issue an enlarged and improved catalogue, in which will be found every requisite for the bee-keeper. The head of the firm is an expert of the B.B.K.A., and they make a speciality of establishing and stocking apiaries with all modern appliances, and give practical advice and assistance to those starting bee-keeping. They also specialise in English bees, and never import foreign bees. The catalogue, which is fully illustrated, can be had free on application.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

May, 1913.

Rainfall, 3·19 in.	Minimum on grass, 27 on 7th.
Above average, 1·23 in.	Frosty nights, 1.
Heaviest fall, 1·04 on 12th.	Mean maximum, 60·9.
	Mean minimum, 44·7.
Rain fell on 12 days.	Mean temperature, 52·8.
Sunshine, 247·2 hrs.	
Above aver., 21·9 hrs.	Above average, 0·9.
Brightest day, 26th, 13·9 hrs.	Maximum barometer, 30·282 on 24th.
Sunless days, 2.	Minimum barometer, 29·365 on 4th.
Maximum temperature, 76 on 27th.	
Minimum temperature, 31 on 7th.	

L. B. BIRKETT

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

JAMES B. (Yorks).—*Wild Bees.*—The bee is the mason bee, a most interesting wild bee, common in this country.

H. A. Greatorex.—*Bee Diseases Legislation.*—The first Bee Diseases Act was passed for the Province of Ontario, Canada, in 1897.

J. B. (Ashton).—*Dead Queen Cast Out.*—The queen is a virgin, and no doubt has been killed in conflict with a rival queen.

S. A. F. (East Dulwich).—The queen is a very old one, and the bees have superseded her. You will, no doubt, find that there is a queen in the hive, therefore there will be no need to purchase one.

Eseph (Ipswich).—*Treating Diseased Stock.*—(1) Yes, Apicure will cure it. (2) The bees remove it. (3) Nothing more can be done as the hive is supered. (4) Yes.

Reader (Sussex).—*Bees in Swarm Fighting.*—(1) It is impossible for us to say why the bees started fighting, which was evidently the case. (2) No. 1 bees are hybrid Carniolans, one is a drone, the other three workers. (3) No. 2 lot, also three workers and one drone, are ordinary British Bees.

Village Shoemaker.—*Utilising Old Combs and Foundation.*—You had better melt the combs down for wax and clean the frames by boiling them. The foundation can be used if freshened up by slightly warming before the fire.

J. H. (Leicester).—*Dead Brood and Fruit Spraying.*—The brood is affected with odourless foul brood, and its state is not caused by poisonous spraying, which would kill the bee in carrying the poison to the hive, not to take into account the process of digestion involved in making chyle food.

F. J. A. (Essex).—*Diseased Stock.—Moving Bees.*—For the sake of neighbouring bee-keepers it is advisable to follow our advice and destroy the stock, as there are no other steps you can take to prevent the spread of the disease. The honey is quite wholesome for human consumption. To remove bees to a new location you must move the hive gradually, not more than one yard per day when the bees are flying.

P. H. (Gillingham).—*Insuring against disease and accident to bees.*—We do not know of a company which will insure against loss by disease, fire, &c. You can insure with the B.B.K.A. against losses through any injury they may do by stinging animals, &c.

Suspected Disease.

B. W. (Sale).—We cannot find any traces of disease in the bees sent.

Anxious (Hants).—The bees are affected with "Isle of Wight" disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

MAN (47), experienced in poultry and apiculture, requires engagement, capable of management in either branch; highest references.—Box XX., "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 69

NUCLEI, four frames, with 1913 laying queen, travelling box free, 18s.—BOWDEN, Sandhills, Wormley, Godalming. v 70

2 CWT. PURE ENGLISH HONEY, in 36lb. tins.—WM. H. HAWKINS, Aisholt, Bridgwater, Somerset. v 67

SWARMS FOR SALE, 10s. each, cash with order.—Apply, APIARY, Wanstrow, Shepton Mallet. v 66

WANTED, a honey extractor, and wax extractor, in thoroughly good condition.—WATSON, St. Margaret's Rectory, Canterbury. v 65

12 CARPENTER made standard frame bee-hives, section racks, &c., clean, ready for use, 10s. 6d. each, or exchange.—H. BEDFORD, St. John's Well, Great Berkhampsted. v 64

SEVERAL bar frame hives, as new, perfectly clean, 7s. 6d. each.—DABBS, Brandwood-road, King's Heath, Birmingham. v 63

FOR SALE, two capital frame hives, cheap, or exchange for stock.—2, Cavendish-road, Southport. v 62

SEVERAL good secondhand hives, 2 lifts, frames, and crates, 6s. each; six racks of clean shallow combs, 5s. each; 200 4-B-way sections, 5s.; one strong swarm, June 1st, on drawn combs, £1. L. MATTHEWS, Great Rollright, Oxon.

SIX large, healthy swarms, sell 12/-, 15/-, packed free.—SPEARMAN, Andoversford, Glos. v 74

TWO grand month old laying queens, 4s. 6d. each.—OWEN, Liberal Club, Cheltenham. v 52

GUARANTEED HEALTHY SWARMS, 3s. per lb., or 15s. per swarm, carriage forward, box returnable.—DENNIS, Brownsover, Rugby. v 49

SWARMS during June, 14s., from bar frame hives, cash with order, guaranteed healthy; stamp for reply.—J. REAVELEY, Starbeck. v 24

GUARANTEED strong healthy swarms, 10s. each, or 2s. 6s. lb., cash with order.—WHITTING, Manea. v 19

COMPLETE volumes of "Gleanings," unbound, for 1908, 1909 and 1912, price 3s. 6d. each, post free.—MANAGER, "B.B.J." Office, 23, Bedford-street, Strand, W.C.

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

Editorial, Notices, &c.

THE BEE DISEASES BILL.

At the monthly meeting of the Sheffield Bee-keepers' Association, held May 8th, in the Wentworth Café, the question of Bee diseases was under discussion. Members of many years' experience were distinctly of the opinion that until some form of legislation was established to deal with the matter the prospect of successful bee-keeping was anything but assured. While regretting the fate of the Bill dealing with this matter, which, after passing first and second readings, was left in the Grand Committee, a resolution was passed urging the Board of Agriculture to use every endeavour to ensure a reintroduction of the Bill during the present session.

It was also decided to forward a copy of the resolution to the President of the Board of Agriculture and the local representatives in Parliament.—W. TALLENT, Hon. Sec.

THE BRITISH BEE-KEEPERS' GUIDE BOOK.

NEW EDITION.

New editions of this, the most popular book on bees in this country, succeed one another with such rapidity that it seems only the other day we were announcing the issue of the twentieth edition of Mr. Cowan's work. In spite of the fact that the subject of bees and bee-keeping is deemed worthy of the attention of some of the most eminent literary men of the present day, whose writings are world renowned, the student needs a simply expressed practical work to which he can turn with absolute confidence when in doubt and difficulty. "The British Bee-keepers' Guide Book" supplies this want, and this is the secret of its unparalleled success. The last edition of six thousand copies was issued in June, 1911, and in less than two years every copy has been sold, a proof that it stands alone as the book of all others which meets the requirements of British bee-keepers. Each succeeding edition is revised and brought up to date by the author, special attention being paid to the all important subject of "Bee-diseases," on which he is an eminent authority. No expense has been spared to make the book attractive, useful, and, in fact, indispensable to everyone interested in bee-keeping.

Judging from the advance orders, the twenty-first edition bids fair to eclipse its predecessors in the matter of sales, and we confidently expect that it will meet with the approval that previous editions have done.

AMONG THE BEES.

By D. M. Macdonald, Banff.

ARTIFICIAL INCREASE.

Continuing the consideration of the subject discussed in my last contribution on the making of increase by the bee-keeper, when bees themselves show no inclination to swarm, it may be advisable to give two sets of plans, the one suitable when a small number of hives are dealt with, and the other when it is proposed to draw on a considerable number. It must be obvious that in the first instance bees will be so much weakened that surplus cannot be looked for during the current season; in the other case, each colony dealt with is so little drawn upon that its efficiency is impaired little, if at all. Indeed, judiciously done, it may prove a boon to the stock, because the withdrawal of a single frame of brood from an extra strong lot, and the insertion of a frame fitted with a sheet of foundation in the vacant space may help in retarding swarming. First let us deal with single stocks, premising that it is our intention to make two lots from one. Simply shift the original hive to one side of the site it has occupied till now, and place your new hive on the stand where No. 1 has hitherto been—a position perfectly familiar to the foraging bees, as noted in a former part of this article.

Look for the frame with the queen, and remove it with all the adhering bees to the newly-prepared hive, fitted with either full-sheeted frames or with those where the comb is built, at first not giving them the full complement unless weather is very warm. This, with the field bees from the old hive, will form the swarm; but to transfer these foraging bees into their new home first, as I have said, remove the original hive to a new site alongside, placing hive No. 2 on its stand, because when the laden bees come home from the fields they will make direct for the new colony on the old site. The shifted hive will retain all young bees, all just hatching, and the fast maturing brood. It must be noted that this lot is now queenless, but, while the bees would in due course repair that loss by constructing queen-cells, it saves some three weeks' loss of time to furnish them with a new queen, a fertilised one if at all possible. Not much, if any, surplus can be looked for from either stock, unless a second harvest is available from the heather.

A modification of this plan may be carried out as follows:—Proceed at first as in the foregoing, but instead of placing the old body-box to one side, raise it above the new one with the queen, and leave it there for about ten days with excluder zinc between the two sets of frames. In that time all the brood in the

top story will be sealed, an important point in the operation, as when it is shifted to a new site there is less chance of any loss by chill. Here again we have two stocks from one.

Another plan with a like result may be given. Many queens are so prolific that ten frames are too few. In such a case double the brood area by placing a second set of frames either below or above the first, giving the queen the full range of the twenty frames. Towards the end of the season, or just before the opening of a late flow, withdraw the second set of frames, throwing the full force of field bees into the one left. Shift the body-box with extra frames to a new site, leaving it to establish itself into a full stock, giving it a ripe queen-cell or a queen. The same process may be followed with the displaced frames of a new natural swarm, which, when hived on new frames, liberates the old ones to be dealt with above in order to give increase either as a single stock, or the frames may be broken up into nuclei.

Stronger lots can be obtained if we make a third stock from two. In this case, take, say, half the combs of brood and eggs from one of the two, shaking back all bees. Shift hive No. 2 to a new stand, and place your new hive, No. 3, now containing the transferred combs, on the stand of the other. Thus one of your two hives will supply the bees, the other the frames of brood. All three should have frames added to complete the brood nest. As before, a fertile queen should be supplied to the new hive. If one is not on hand, then a queen-cell can be given them about thirty-six hours after the swarming has been carried out.

With a large number of hives on hand a single frame of brood can be taken from, say, eight of these, and the new hive placed on the stand of No. 9, thus making No. 10. Alternatively, bees can be carried to the new hive on the frames withdrawn, and a caged queen given them. As, however, these bees would at once return to their old stands when out foraging, some system of "claustration" must be resorted to in order that they may be taught to mark the new location; or the hive containing them may be temporarily carried to an out-apiary, when the bees will stay wherever they are put. The frames of a swarmed lot may be broken up into three or four nuclei, or frames with adhering bees may be confined with moss for a time to cause them to mark the new location when they find their way out, or yet again frames may be taken to any out-apiary to form new small lots. The number of ways is legion, but underlying all there must be a certain limited procedure following well fixed laws, as noted in my former article.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

FITTING AND WIRING FRAMES.

(*Continued from page* 233.)

When dealing with a plain top frame that has been wired a sheet of foundation is laid on the wiring board, which is made to fit comfortably into the frame (Fig. 12), taking care to put the straightest

FIG. 12.

edge of the sheet to the underside and close up to the top bar. This can be done by letting the foundation project beyond the top and then drawing it back with

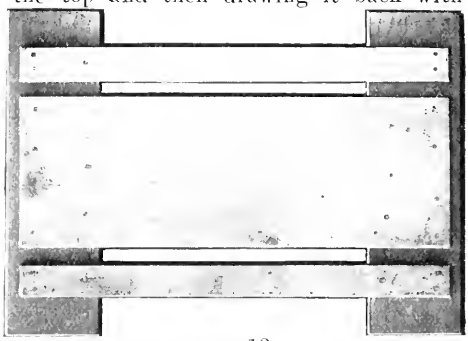


FIG. 13.

the top bar when laying it in position. Fig. 13 shows the other side of the board arranged to take a shallow frame. We now require an embedder to force the wire

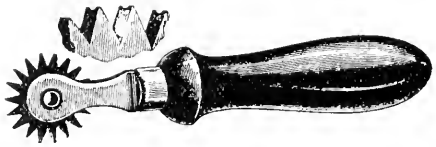


FIG. 14.

into the foundation; the "Woiblet" is the commonest used. It is a serrated wheel with a groove round so that it can be run along the wire; this is heated in the flame of a spirit lamp (Fig.

15) or a home made heater as designed by Rev. F. S. F. Jannings, and illustrated some little while ago in our pages, may be made. A candle or paraffin lamp flame also at the elbow, gives two portions to be used (Fig. 18); after being heated, the nail or hook is drawn along the wire so that the latter is forced into the wax. The board and

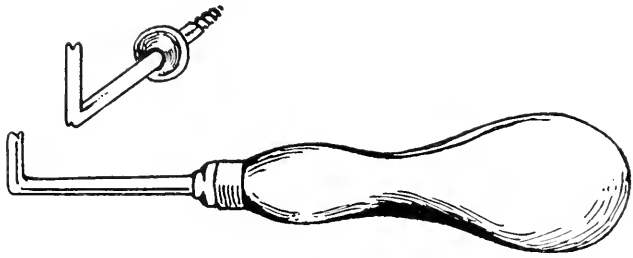


FIG. 18.

blackens it with smoke, and makes the foundation objectionable to the bees. The four nails are pressed home by means of the thumb, and the wheel is run along the

FIG. 15.

wire (Fig. 16); the embedder must not be too hot or it will cut right through the foundation, it should be just warm enough to melt the wax slightly.

In hot weather it will be found advis-

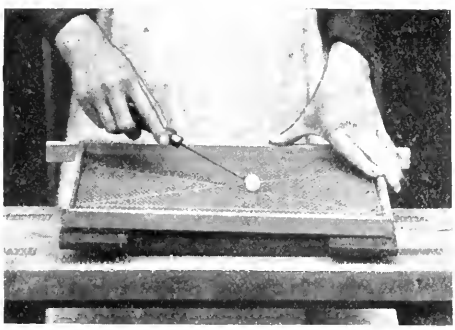


FIG. 16.

able to damp the board to prevent the foundation sticking. In place of the "Woiblet" embedder a 2in. wire nail can be used, driven into a handle, the head cut off and a nick filed in it (Fig. 17), or a dresser hook, which, being brass, re-

FIG. 17.

tains the heat longer, can be screwed into a handle. A nick filed in at the end, and frame is now lifted up and held at an angle while molten wax from a smelter is poured along the edge, fastening the foundation to the top bar (Fig. 19). As soon as this is set, which occupies a few moments only, the frame is removed from the board and molten wax poured down the opposite edge; in this way the foundation is made very secure.

It is not necessary to have a wire running close to and parallel with the top bar, as the fastening of the foundation to the top bar and the cross wires holds it quite firm.

Instead of using the smelter, which is expensive to buy, melt the wax in a jar placed in a saucepan and surrounded by

FIG. 19.

water, it can then be dipped out by means of a spoon bent up on either side to make a spout (Fig. 20), and poured along the edge, or a tube (Fig. 21) can be used. This is open at the pointed end, and has a small hole in the top: wax is melted as described

FIG. 20.

above, or in a special tin (Fig. 22). When the tube is placed pointed end downwards in the jar the wax runs in at the pointed

end to the level of that in the vessel: the finger placed over the top hole prevents the air getting in and so retains the wax until released, the tube is placed in position (Fig. 23), the finger removed, so that the wax is released and runs out.

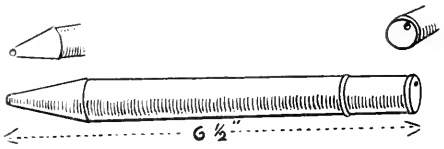


FIG. 21.

If a split top frame is used then it will be necessary to get the foundation into the cut after wiring and before embedding. Instead of trying to open the cut by means

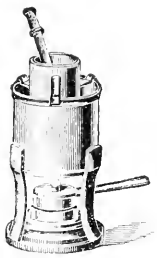


FIG. 22.

of a penknife or screwdriver, which is often attempted, one of two methods can be adopted: a couple of nails are driven into the bench about 4ins. apart, and standing up about ¼in., these are inserted

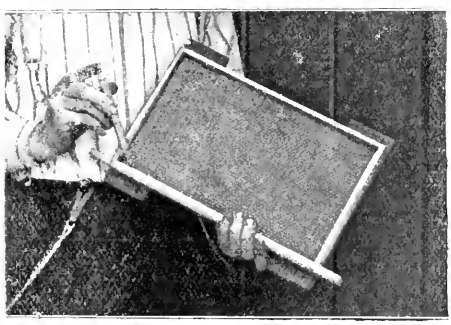


FIG. 23.

into the saw cut by placing the frame as shown at Fig. 24; by pulling with the left hand and pushing with the right the saw cut is opened, the foundation is held between the finger and thumb of each hand and slipped down into position while the frame is held with the groove open (Fig. 25). Another method is to drive a couple of nails into the bench about ¾in. apart; these are inserted into the saw cut and the frame turned right round so that the cut is held open automatically. Reference to Fig. 26 will show the nails and the position of the frame, so that the foundation can be slipped in quite easily. The frame is then released by twisting back, when the split closes and grips the foundation, the frame is then laid on the board and the wire embedded. In the case of a split top frame it will be found that the

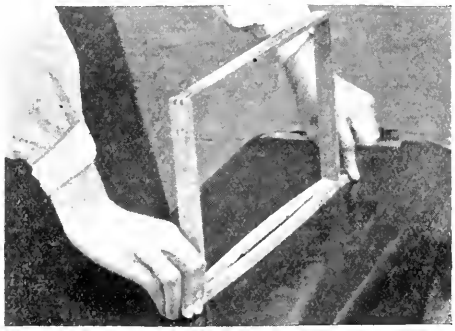


FIG. 24.

cut does not run right to the end bar, as it is cut on a circular saw; therefore, to prevent the foundation from buckling at the corners when being pushed into position it is advisable to cut off the two corners about ½in. deep.

It will also be found necessary to have the foundation soft and pliable to embed the wire satisfactorily. If it has been stored for some time it will be hard and brittle and will break very easily, also it will have a white, dull appearance instead

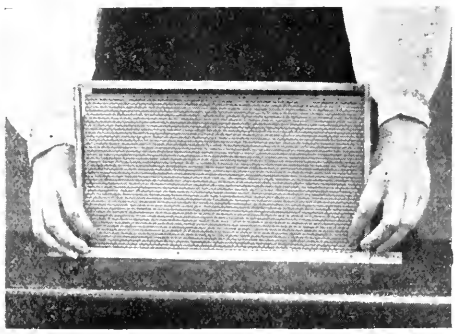


FIG. 25.

of being bright and yellow; in this condition the bees will not accept it very readily. It can be made pliable and fresh aroma given by warming each sheet in front of the fire or spreading them out on the grass in the sunshine.

Having completed the fitting of the frame, the last operation is putting on the metal ends. Many bee-keepers seem to be at a loss to know which is the right way to do this.

Looking at the metal end at the open portion, it will be seen that they are so

folded that on one side we can see the sharp edges of the tin: this portion should go on first. To get the metal ends on comfortably, use the nailing block as

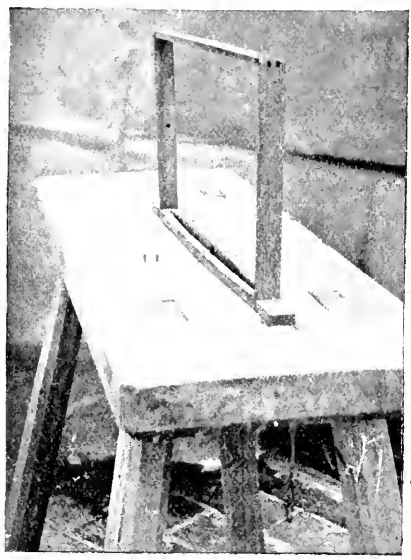


FIG. 26.

shown at Fig. 27, by resting the metal end over one of the holes and pushing the frame end through it. This is much better than resting the frame bed against the chest and pulling the ends on with the fingers, for this sometimes causes bruising

FIG. 27.

and soreness of the chest, as well as cut fingers. It will be necessary to see that there is a clear way for the frame in the end, as often the two inner portions of tin get bent together; when this is the case they must be straightened out.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

DEALING WITH "ISLE OF WIGHT" DISEASE.

[8741] Mr. Victor George's letter in last week's "B.B.J." (page 235) on "Preventing Disease," would lead one to suppose that "Isle of Wight" disease was not within some few miles of Fulbourne. Unfortunately, such is not the case, and I should like to state facts of grave moment affecting bee-keepers in this neighbourhood.

Within 400 yards of our home apiary there was an apiary of some sixty stocks, which last season became affected with the pest: this spring it was reduced to about half-a-dozen, the result up to date affording yet another instance of the necessity of the Bee Diseases Bill being passed for the protection of others, who are doing their utmost to combat this most destructive of bee diseases.

One can scarcely credit the facts, which are as follows:—These sixty stocks belonged to an expert, a judge of honey, and a lecturer on the modern system of apiculture at local shows covering a wide district. The owner's attention was called to the state the bees were in in February, but many weeks elapsed before anything whatever was done: in the meantime, of course, neighbours' bees were robbing the diseased hives, with what result can be imagined. Eventually, after an extremely strong-worded protest from an interested party, someone came over and stopped the entrances with grass, which very quickly allowed bees to regain admittance.

Two small apiaries close to this evil lot are badly affected: one of them, belongs to a most painstaking bee-man, who has had to destroy several stocks, and is now treating others: his bees can be continually seen making a bee line to this pestiferous lot of diseased stocks. How is it possible to keep bees healthy under such conditions?

The disease attacked a small out-apiary of ours of twelve stocks last year before any known remedy was on the market. For safety's sake, I destroyed the whole lot, as we had another thirty colonies within a hundred yards. Some of these were affected last spring, but owing to a month's illness I could pay no attention to them by treatment. Four bad cases I destroyed, others that were affected as

well as those showing no sign of the pest, I treated with Ayles' remedy, as I will presently describe. All are now at the present moment entirely free from disease. In the home apiary of fifty stocks I have had one case only and am now quite free; in another out-apiary of thirty stocks I had three cases, all of which were treated with the remedy, the pest checked, and eventually cured.

Now for the treatment, but first may I ask: Do people, when bad smells are prevalent or infectious diseases near one, wait until disease appears before disinfecting? Certainly not! Then why defer a remedy until the pest attacks the bees? In many instances the mistake is fatal, which I have proved to my own satisfaction.

I first scorch the hives, floor, and cover with a painter's lamp; then paint the parts with Ayles' solution. One application in every instance has, with me, checked the disease in its early stage, and with the diseased stocks in three or four weeks' time (sooner if any sign of the pest reappears) I go through the same operation of burning and dressing with the cure, and I have found this, up to the present, quite sufficient to prevent a recurrence of the disease.

If anyone interested cares to call, I shall be pleased to show him round, though I must add it is not wise to insist that we are out of the wood yet.—James Lee, Fulbourn, Cambs.

[8742] I have been greatly interested in reading the contributions in the last issue of our Journal, *re* "Isle of Wight" disease, and cordially agree with your remarks on page 233, but I am afraid that Mr. Wigley's method will fail, assuming, of course, that infection is spread by the dead bees lying on the ground, for in my own experience dead bees have been carried as far as 100 yards from hives, and live bees seen crawling fifty yards away. It would be difficult to collect these dead bees and treat the ground with a disinfectant, especially so in my case, as it would take me to the railway, and I have no desire to be *collected*. With reference to Mr. George's remarks (8738), I cannot agree with what he says concerning Mr. Lee's method of preventing disease, as I have good reasons for thinking that Mr. Lee did not treat his hives because he *knows* Ayles' cure is effective, but because he believes in taking all possible precautions, and *hopes* for good results. I consider that the prosperous condition, as stated, was due partly to good management, and partly to immunity from attack.

I also disagree with the writer of (8739), for I have been troubled with "Isle of Wight" disease, and there is nothing near me to spray, unless they spray the heather and fir trees which abound in this district.

My experience with Ayles' cure is as follows:—On February 4th last, I dressed a hive with it according to instructions, and transferred an affected lot of bees to the hive thus treated. They were all dead on the 6th. On the 13th of May a stock of blacks was so strong that I thought of making an artificial swarm; two days later it showed signs of "Isle of Wight" disease, but, remembering what happened before, I treated the floor only, opening the entrance to full width (16in.). The result was, that dead of all ages were brought out daily till the numbers were so reduced that I destroyed the rest, and am now waiting to see if similar treatment will give the same result with the rest of my bees for all are now affected. If they all die I shall have a good fire later and make a fresh start in 1914.—Bacillus, Pirbright.

HONEY, AND "ISLE OF WIGHT" DISEASE.

[8743] We have just read with peculiar interest the article in the current number of "B.B.J." for June 25th, *re* "Isle of Wight" disease, by J. N. Kidd.

When speaking of the robbing of a diseased stock he says that it "indicates by its complete success the possibility that there is no *need* for any other way of spreading; it therefore is possible that this is the only way the disease spreads from hive to hive."

Your correspondent invites criticism of his theory, so for his benefit I will give you a short account of our recent experience.

We are novices at bee-keeping. At the end of last season we closed down for the winter with one frame hive and one skep. The frame hive was full of bees to overflowing. During the months of February and March we noticed that when the bees had been flying there was always perhaps a score crawling on the ground. This we thought was spring-dwindling. Later on we examined the hive and found plenty of stores, but a weak stock and little brood. To stimulate them and give them a good start we put them into a clean hive and bruised the combs. Through not having the hive level the honey from the bruised combs ran out at the entrance, and in this way started the skep bees robbing.

About this time we had our suspicions aroused as to "Isle of Wight" disease; and these were confirmed when we sent some bees up to "B.B.J." office. We immediately removed the skep to another

locality and burned diseased stock and fittings, &c.

On May 25th the skep bees (the robbers) threw off a moderate-sized swarm, which appears quite healthy and is doing well, as is also the parent stock. I might say that we were absolutely certain that it was the skep bees which had been robbing.

Now, sir, we should like to ask: (1) Were we, as well as yourselves, mistaken as to it being really "Isle of Wight" disease, although we noticed all the symptoms, such as dislocated wings, dysentery and so forth? (2) Is your correspondent mistaken when he suggests that it "is contagious only through the medium of honey?" (3) Is it possible that although three months have gone by the disease may reappear?—BROWN, BROS., Hinckley.

[(1) There was no mistake in diagnosing the trouble as "Isle of Wight" disease. (2) There are other mediums besides honey. (3) Yes, quite possible.—EDS.]

MR. STAPLETON'S EXPERIENCE.

[8744] I shall be much obliged if you will allow me a small space in your valuable BEE JOURNAL in which I may reply to numerous inquiries from bee-keepers seeking advice about the above disease. Personally, I cannot write, and it is not always convenient to get assistance, so I hope all inquirers will understand my difficulty and why I have not replied. Many have asked me the question: Were my bees really affected with "Isle of Wight" disease, or was it something else which caused their death? I can assure them that it was "Isle of Wight" disease, but how many bee-keepers know that it appears in two forms, one in spring and autumn, when the bees are full of a yellow fermented substance which resembles pollen when dry. Bees in this stage do not run with their wings spread as they do in summer. They usually, on leaving their hives, make a few short hopping flights, fall to the ground, and crawl for a yard or so apparently in strands. If such bees are pressed, a yellow excrement exudes, which is fermented. This is not present at the time of the honey-flow. Also in spring or autumn bees may be seen crawling at any time of the day, while in the honey-flow they appear from 8 to 10 a.m., after that there are usually no more that day. During the honey-flow, on leaving their hives, the bees usually run over the ground very rapidly at first, with their wings spread out somewhat resembling a swallow when flying; they then gather in groups and die. Those bees are not always filled with a yellow substance, as in spring or autumn, neither do they show the swollen appearance, and the drugs for the so-called cures may have an effect on one and not on the other. As I have proved in my experience, what will kill one may cure another. The best method, as I have often said, is to work on the lines of immunity, but this is not so easily accomplished, as the bees would usually die before we have time to experiment, as in the case of my apiary, which, from about sixty hives, was reduced to fourteen. The bees showed the well-known symptoms, which I have given very briefly to convince your readers that my bees once had the well-known "Isle of Wight" disease. I supplied three stocks last year to a customer in the town of Camborne, and two are the only surviving stocks now remaining there, though upwards of sixty were packed down for winter. The other stock died with the rest. All bees which died left abundance of sealed stores, and showed the usual symptoms often given in your Journal in replies relating to "Isle of Wight" disease. This is the only loss among upwards of one hundred stocks in my own apiary, and fully two hundred of whom I am in charge in various parts of this county. All combs which my bees died on are still in use, and I have no symptoms of any disease now. In conclusion, allow me to say my apiary is open to visitors, and all who are interested in bees are invited to pay a visit.—P.S.—The weather is very unfavourable at present.—T. STAPLETON, Gwinear, Hayle, Cornwall.

SLUGS AND BEES.

[8745] With reference to my query (No. 8638), page 208, and your reply, it may interest your readers to know that I successfully followed your advice, but although I cut out all the comb and removed as many bees as possible, placing the hive quite close to the ventilator, nearly all the bees went back into the hole in the wall. Apparently I had failed to secure the queen; the next day I hived as many of the bees as I could, with better success; as they then went into the hive, so the queen must have been there although I did not see her.

Some weeks ago I caught a large slug about three inches long coming out of one of my hives, this (the slug) was full of honey, and in dissecting it I also found what, with the aid of a microscope, I satisfied myself are immature bees. If you cannot believe this I will forward the objects in question, which I have preserved. As slugs are not mentioned in the "Guide Book" as enemies of bees this may interest some of your readers.—G. M. E., Limerick.

[The slug (*Arion empecorum*) is known as an enemy of the bee, but it is not an

important one owing to its slowness of movement, and it can be kept out of hives with a little care. We have lately had reports from readers, of these creatures eating the dead bodies of diseased bees lying outside the hives.—EDS.]

BEES WANTED FOR EXPERIMENTAL PURPOSES.

[8746] I shall be much obliged if you will put me in communication with anyone who can supply me with bees, alive if possible, suffering from micro-sporidiosis. I would be quite willing to pay for trouble and expenses.—F. J. DUNKERLY, Natural History Department, University of Glasgow.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of May, 1913, was £3,636.—From a return furnished to the BRITISH BEE JOURNAL, by the Statistical Office, H.M. Customs.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Colony or Stock (p. 202).—If Mr. Herrod will allow me to criticise his use of the term "colony," I should like to plead once more for uniformity of terms. As I understand the word, it may properly apply to either stock, nucleus, or swarm. It would perhaps limit the use of the term "stock" too strictly to consider it as solely covering a colony having a fertile queen, stores, and brood, but that is how I understand it in general use. Thus, a stock which has cast a swarm is, no doubt, still a stock, although it has not yet a fertile queen, but it is potentially queen-right, and it would serve no purpose to quibble over such fine distinction. Generally speaking, however, a stock which is not queen-right is not an unqualified stock, but demands some distinguishing adjective, as, for instance, a "queenless stock."

Where Bees Pay (p. 206).—It is not certainly clear from the short quotation given by D. M. M., of what the "average" of ten tons consists. Is it the average per season of some one bee-keeper, or the average per bee-keeper? One may presumably easily conclude that it is not the average per hive! I imagine that this crop would require at least 300 hives, and I doubt whether "300 hive men" are so common as D. M. M. supposes, when he suggests that they might emigrate in their hundreds. That is to say, men capable of successfully managing 300 hives single-handed. "Fifty tons" means either more hives, or an exceptional season, in either case more work. So that £300 a year is not to be obtained too easily, whilst the comparative value of the income should be realised before "hundreds" rush off to Australia. There is no doubt an opening, but the small bee-keeper should carefully count the cost before building too heavily on his hopes. The price of £30 per ton is about 3¼d. per lb., out of which presumably expenses must be paid.

Time before Queens begin to Lay (p. 218).—I must say that I have not found young queens laying within ten days after the casting of the prime swarm. Conditions may differ with places and races, but it has not, I think, occurred with me so far as I have been able to observe. For one thing, when the swarm leaves in favourable weather, that is, undelayed by adverse conditions, the young queens do not hatch out so soon as stated. I have known swarms leave with only one or two cells sealed, and a large number in progress. In such cases, which I take to be the normal, or undelayed the sealed cells cannot have been sealed long. Again, it is very rarely the case, I think, that fertilisation takes place on the first trip from the hive. I should usually look for a second swarm on the tenth day, and where such did not occur owing to the destruction of cells, I should imagine that the new queen has been occupied during that period with internal affairs.

Queries and Replies.

[8651] *Preventing Drone-rearing.*—I shall be glad if you will kindly give me information on the following point:—When bees have worked their way down from old combs on to new ones placed below, and after the excluder zinc has been put between the two brood-nests, what is the best way to get rid of drones, as they hatch out of the old combs? I suppose the only thing to do is to open the hive and let them fly out at the top. Should this be done every day when the weather is suitable, and is five minutes long enough to leave the hive open?—MAYHEWBER.

REPLY.—The best plan is to close-space the frames (see "B.B.K. Guide Book," page 46), and so prevent the drones emerging from the cells.

[8652] *Uniting Swarm to Weak Stock.*—I have one weak and one strong stock of bees, and expect the strong stock to swarm shortly and wish to unite the latter to the weak stock; how can I do so? I have several bee books, but none of them give the information, at least, not directly, if they do at all.—AMATEUR, Denbighshire.

REPLY.—Hive the swarm on to about six frames fitted with full sheets of foun-

dation near to the weak stock. Reduce the latter so that it covers four combs. Three days after the swarm has been hived kill the old queen, dust both lots of bees with flour and put all into one hive, interspacing the combs.

[8653] *Superfluous Drones.*—I have a stock of bees which is almost useless, being composed mostly of drones. I wish to unite the workers, of which there are only about 25 per cent., to a swarm, or it may be a cast, which came from another hive about a week ago. Will you oblige by stating how I should separate the comparatively small number of workers from the large number of drones. If I could separate them satisfactorily I would destroy the latter. I cannot see a queen in either the stock or the cast, but I presume there must be one in each. I would prefer to destroy the queen in the stock, which I suspect of being a drone-breeder, but if I fail to see her—through want of experience—is there likely to be trouble if I unite the stock and cast without removing the queen?—G. F. H., Stanwell.

REPLY.—Do not trouble to destroy the drones, as these will meet their death in due course. If you are not good at finding the queen, make an artificial swarm of the bees, then run them into the hive through an excluder zinc placed at the entrance; the queen will be unable to pass in and can easily be caught.

Bee Shows to Come.

June 25, at Richmond, Surrey.—Honey Show, in connection with the Richmond Horticultural Society's Annual Flower Show, in the Old Deer Park, Richmond. Open classes for amateurs. Special prizes for Honey and Wax. Apply to W. Cook, Hon. Sec., Holmesley House, Sheen-road, Richmond.

July 1 to 5, at Bristol.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. **Entries closed.**

July 17 and 18, at Lincoln.—Lincolnshire Agricultural Society's Show. Honey section, under the management of Lincs. Bee-keepers' Association. Prizes value £30. Open classes for Appliances, Observatory Hives, Extracted Honey, and Sections. Schedules from J. H. Hadfield, hon. sec., Alford, Lincs. **Entries closed.**

July 23 and 24, at Cardiff.—Glamorgan Bee-Keepers' Association, in connection with the Cardiff and County Horticultural Society's Show. Open classes for collection, sections, &c. Schedules from W. J. Wiltshire, Maindy School, Cardiff. **Entries close July 17th.**

July 23rd and 24th, at Wolverhampton.—Staffordshire Agricultural Society's Show. Bee and Honey section under the direction of the Staffordshire Beekeepers' Association. Open classes for appliances, observatory hives, extracted honey, and sections. Schedules and entry forms from C. R. Forse, Hon. Sec., Trentham, Stoke-on-Trent. **Entries close July 5th.**

July 23, 24, and 25, at York.—Show of Hives, Honey, &c., in connection with the Yorkshire Agricultural Society's Show. Liberal prize list. Schedules and particulars from J. Maughan, secretary, Blake-street, York.

August 4th, 1913 (Bank Holiday), at Cambridge.—A Honey Show will be held in connection with Cambridge Mammoth Show. Several open classes for extracted honey, sections, and wax. Schedules from W. Driver, 17, Sussex-street, Cambridge. **Entries close July 30th.**

August 6th, at Stoke Park, Guildford.—Annual Exhibition of Bees, Wax, Appliances, &c., will be held by the Surrey B.K.A., in connection with the Guildford and West Surrey Agricultural Association. Nineteen classes (five open to all). Many medals. Schedules from F. B. White, hon. secretary, Marden House, Redhill, Surrey. **Entries close July 26th.**

Aug. 7th, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Three open classes; one for single 1lb. jar of honey (entry free). Schedules from G. Richings, 2, Shrubbery-terrace, Worcester.—**Entries close Aug. 2nd.**

August 7th, at Bruton.—The Annual Show of the Somerset Bee-Keepers' Association, in connection with the Bruton Flower Show. Open classes. Schedules from Mr. R. Litman, South-street, Castle Cary, Somerset. **Entries close August 2nd.**

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

Z. Y. X. (Somerset).—*Dealing with Diseased Stocks.*—(1) No. (2) No. (3) It is one of the most powerful antiseptics known. (4) Cannot say. (5) Yes, it killed the bees.

T. G. (Doncaster).—*Unfortunate Queen-introduction.*—(1) Both queens are fertilised. (2) We should say that there was a young queen in the hives which treated the Italian queens in the manner you describe as no doubt, you made the nuclei some time before receiving the queens. It is easy for even an experienced person to miss seeing a virgin when searching for her. (3) You did wrong in removing the brood: this should have been left.

J. H. M. (Fulham). *Three Large Swarms from one Stock.*—It is one of the characteristic traits of this race of foreign bees to swarm instead of gathering surplus. Hence your experience.

W. N. (Westonbirt).—*Virgin Queens.—Symptoms of Disease.*—(1) Both queens are virgins. It is a little unusual for them to settle on people in the way you describe. (2) The cold weather is keeping the bees from going up into supers. (3) Odd bees acting in the manner you describe do not indicate disease: it is only when there are a good many crawlers that you should suspect trouble. (4) Your bees appear to be healthy, so far as we can see.

E. B. BAKER (Worthing).—*Bee Parasites.*—The insect is a mite of the genus *Gamasus*, very common on many beetles but rarely found on bees.

S. A. BEST.—*Dying Drones.*—The bees have given up all idea of swarming; that is why the drones are not wanted.

COTTAGER (Taunton).—*Honey Sample.*—No. 1 is from fruit bloom: Nos. 2 and 3 are mainly from charlock. No. 3 is quite good enough for showing purposes.

A. P. (Petworth).—*Perforated Cappings.*—(1) The bees are either short of food or you have been using too much naphthaline in the hive. (2) This is, no doubt, caused by the flight of the virgin for mating purposes, or the bees may be preparing to throw off a cast.

Suspected Disease.

G. R. G. (Wandsworth).—(1) It is "Isle of Wight" disease. (2) It is quite possible that the parent hive may eventually show signs of the disease also.

G. G. D. (Glos.), ANXIOUS (East Dulwich), and M. D. (Colchester).—The bees have died from "Isle of Wight" disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ¼in., or 8s. per inch.*

PRIVATE ADVERTISEMENTS.

PRIME NATURAL SWARMS ENGLISH BLACKS. 15s. each, guaranteed healthy; 28lb. tin clover honey, £1.—NORTH, Cressing, Braintree, Essex. v 76

HIVES, Conqueror, nucleus, supers, combs, appliances, cheap; state requirements.—HULBERT, Hermitage, Worcester. v 75

WANTED, a geared extractor, ripener, good condition, cheap for cash.—HENSLEY, Lordswood-lane, Chatham. v 97

MODERN small bee farm for sale, with all appliances, 35 stocks, guaranteed healthy, 30 spare hives, extracting house, 100 supers, drawn combs, average take 18cwt., producing nice income; cottage, large garden and meadow, rent £8; ideal district; particulars.—DAVIES, Bagshot, Hungerford. v 96

FEW NATURAL SWARMS for sale, disease unknown, 15s. each, or by weight.—WM. BECK, Airton, Bell Busk. v 92

GOOD new full section honey for sale.—J. MEPHAM, Orlestone, Hamstreet, Kent. v 90

CWT. SPLENDID LIGHT HONEY, good value, 60s., f.o.r.—LITMAN, Castle Cary. v 89

TWO strong, healthy stocks, 21s. each.—PALMER, 26, Kingston, Yeovil. v 88

BRICE'S one-frame observatory hive, as new, bargain, 18s.—WHEATLEY, Spa Apiary, Hinckley. v 85

OLD ENGLISH BLUE-RED BANTAM COCK and three pullets; also cock and two hens, White Wyandotte bantams, 25s., or exchange bee appliances.—WM. HANCOCK, Bishop's Lydeard, Taunton. v 87

OVERSTOCKED.—Three strong, healthy stocks of bees, on ten frames, young queens, 25s. each; can be inspected any time.—T. WOOD, 20, Shirley-street, Saltaire. v 84

SWARMS, healthy, wanted, before June 25th; state price on rail per lb.—WOOD, Colewood, New-road, Mitcham. v 83

CLEAN shallow combs, eight in rack, 3s.; seventeen section racks, 1s. each; Lee's extractor, two cage, 25s., with lids; comb ripener, with strainer, 11s.; secondhand hives, 5s.; 3, 4 dozen 1lb. bottle travelling cases, cost 8s. 6d., 6s. each; excluders, 6d. each.—F. SOFTLY, Norton-road, Letchworth, Herts. v 82

FOUR strong stocks, in bar frame hives, several secondhand empty hives, and swarms, free from all diseases, cheap.—BRADSHAW, Allerston, Pickering. v 81

OBSERVATORY HIVE, 3-framed, never used; what offers?—RIGBY, Beverley, Leamington. v 80

SEVERAL fine 1913 fertile English black queens, 3s. 6d. each.—ROPER, Thorpe-on-the-Hill, Lincoln. v 79

THREE W.B.C. RACKS, with frames and dividers, complete, 2s. each; six 1lb. section-racks, 9d. each.—HARRIS, Aberfeldy, Perthshire. v 78

EXCHANGE for bees, red Irish Setter dog puppy, 5 months, good working strain, by pedigree sire, beauty, 25s.—FARNELL, Eldwick, Bingley. v 77

MAN (47), experienced in poultry and apiculture, requires engagement, capable of management in either branch; highest references.—Box XX., "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 69

NUCLEI, four frames, with 1913 laying queen, travelling box free, 18s.—BOWDEN, Sandhills, Wormley, Godalming. v 70

SEVERAL bar frame hives, as new, perfectly clean, 7s. 6d. each.—DABBS, Brandwood-road, King's Heath, Birmingham. v 63

GUARANTEED HEALTHY SWARMS, 3s. per lb., or 15s. per swarm, carriage forward, box returnable.—DENNIS, Brownsover, Rugby. v 49

COMPLETE volumes of "Gleanings," unbound, for 1908, 1909 and 1912, price 3s. 6d. each, post free.—MANAGER, "B.B.J." Office, 23, Bedford-street, Strand, W.C.

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

SECTIONS WANTED, best quality, for cash.—SMITH and CO., 17, Cambridge-street, Hyde Park.

36TH SEASON.—Swarms, 3-frame nuclei, headed by imported Italian or other queens. Queens:—Italian, hybrid, and British. Rhode Island Red fowls.—Particulars, apply, ENOCH WOODHAM, Clavering, Newport, Essex. v 94

1913.—PURE imported Golden Italian fertile queens, guaranteed healthy, vigorous, prolific, 4s.; specially selected, 7s. 6d. each, prompt despatch.—J. B. GOODARE, Woden Apiary, Wednesfield, Wolverhampton. v 93

SMALL DUTCH SWARMS, 12s. 6d.; selected 1913 queens, 6s. 6d.—J. C. BEE MASON, 22, Hanway-street, Oxford-street, W. v 86

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held at 23, Bedford Street, Strand, London, W.C., on Thursday, June 19th, 1913. Mr. T. W. Cowan presided. There were also present Sir Ernest Spencer, Dr. T. S. Elliot, Messrs T. Bevan, C. L. M. Eales, J. N. Smallwood, J. B. Lamb, E. Walker, A. Richards, Association Representatives Messrs. G. Mason (Northampton), D. Seamer (Lincolnshire), Rev. F. S. F. Jannings (Yorkshire), W. J. Saunderson (Northumberland), G. J. Flashman, and F. Ford (Barnet), G. S. Faunch, and G. R. Alder (Essex), F. W. Harper (St. Albans), and G. Bryden (Crayford).

Letters expressing regret at inability to attend were read from Miss Gayton, Messrs. G. W. Avery, E. Watson, O. R. Frankenstein, A. G. Pugh, and G. W. Judge.

The minutes of the Council meeting, held May 15th, 1913, were read and confirmed.

The following new members were elected:—Mrs. L. Beer, Miss N. M. Robinson, Miss E. M. Penrose, Mr. H. A. Collin, Mr. A. A. Hall, Mr. F. Impey, Mr. E. Loxley, Mr. H. A. Greatorix, Mr. M. Atkinson, Mr. H. B. Lake, Mr. R. F. Cuthbert, and Mr. H. Stephens.

The Olney and District Bee-keepers' Association applied for affiliation, and were accepted.

The Staffordshire Association nominated Mr. W. Valon; Aberdeenshire, Mr. W. F. Reid; Cumberland Mr. J. Price and Mr. J. Steel, as their delegates. All were accepted.

The report of the Finance Committee was presented by Mr. J. Smallwood, who stated that the payments into the bank for May amounted to £227 8s 9d., the bank balance being £297 14s. 7d. Payments amounting to £117 18s. 6d. were recommended.

Mr. Eales read the draft agreement prepared by the Committee, which was appointed on February 20th, 1913, to consider the question of the Secretary's remuneration, and to draft one agreement in lieu of the two existing ones, which are quite out of date. It was proposed by Sir Ernest Spencer, seconded by Mr. Smallwood, supported by Mr. Lamb, and carried unanimously, "That the draft agreement drawn up in reference to Mr. Herrod's official position with the British Bee-keepers' Association be received, approved, and executed."

Examinations for preliminary examinations were sanctioned for Leicester, St. Albans, Worcester, Hitchin, Studley, Bristol, and Keswick.

In view of the fact that Mr. Asquith had stated in Parliament that unless the Bee Diseases Bill could pass as a non-contentious measure, there was little hope of it becoming an Act this session, it was resolved unanimously that a copy of a letter, drafted by the Chairman, urging the necessity of speedily passing the Bill introduced by Mr. Runciman be printed and posted to every member of Parliament.

It was resolved that a copy of the Bill be posted to every member of the Council to enable them to approach their Member of Parliament to support the Bill.

Mr. Harper kindly consented to make specimen designs for the new certificates granted to those passing the examination of the Association.

Reports of preliminary examinations held at Budleigh Salterton, and Braintree were presented and passes were granted to Miss S. M. Penrose, Messrs. E. H. Turner, C. Tunmer, F. E. Lennox-Brown, F. G. Dann, and W. F. Judge.

The next meeting of the Council will take place on Thursday, July 3rd, 1913, in the Hives and Honey Department at the Royal Show, Bristol.

RICHMOND AND DISTRICT B.K.A.

A public meeting of the newly-formed Richmond and District Bee-keepers' Association will be held on Tuesday, July 1st, in the Schoolroom attached to the Primitive Methodist Chapel in Sheen Road (close to the Fire Station), commencing at eight o'clock. George Cave, Esq., K.C., M.P., President of the Association, will preside. Anyone interested in bees is invited to attend, and members will be enrolled for the Association. Ladies are eligible for membership. The subscription is 2s. 6d. per annum. A lecture on "Bee-keeping for Beginners" will be given by Mr. A. G. Gambrill, certified expert of the British Bee-keepers' Association, who is one of the experts and advisers appointed by the Association.

THE ROYAL LANCASHIRE AGRICULTURAL SOCIETY'S SHOW.

The splendid honey now coming in freely will cause the thoughts of bee-keepers' to turn towards the shows for honey and bee produce now being held in many parts of the country. Among these no show offers more inducements than that of the Royal Lancashire Agricultural Society, to be held at Burnley on July 31st to August 4th. There are this year eight classes open to the United Kingdom, with prizes on a most

liberal scale; also silver and bronze medals, in addition to money prizes for the best exhibits in the County Palatine classes. It will be well worth while for all bee-keepers to apply for schedules, and see for themselves how generously the bee produce department is catered for at this important show. Entries finally close on July 9th, but those sending before June 28th get the benefit of a lower entry fee, therefore no time should be lost in writing for same.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

"I.O.W." DISEASE AND THE "KENTISH" CURE.

[8747] I was much interested in reading the description in "B.B.J." of June 12th, of Mr. Wigley's treatment, as I am a great believer in the tonic properties of quinine, and last April, on reading his letter (8707, page 164), wondered whether quinine was one of the drugs he was experimenting with, for I have long thought of it as a possible remedy for "Isle of Wight" disease, but so far this district has escaped, and I have not been called on to deal with any cases, so I have had no opportunity of testing it. One thing only, to my mind, is against it, and that is the amount of sulphuric acid required to dissolve the sulphate. I cannot dissolve 60grs. in ½oz. of water with only two drops of the acid. How does Mr. Wigley manage? I find six drops at least are required, but am doubtful whether the extra four drops might not prove too much for the bees. If Mr. Wigley could set my mind at rest on this point, I should be grateful, for if six drops are not harmful, I should like to experiment this back end when making autumn syrup.—F. Sitwell.

SUPERS AND HOT WEATHER.

[8748] On Monday morning, June 16th, while sitting on my observation stool, according to my usual custom, when I can snatch a minute or two, to watch the goings in and out of my bees, I noticed there appeared to be an unsettled feeling among them, pretending they were going to indulge in swarming. They seemed to say: "Don't sit around loafing on that there stool, get up and give us some air, or you will soon know the reason why!" I did so at once by lifting up the cover of each quilt and letting it go back again, pulling out all the slides, and lifting off the roofs from every hive, placing them crosswise on the top of the lifts in order to admit a free circulation of air, since my supers are wrapped up very warmly. The manipulation acted like magic, order was restored, and the bees went to work like "blacks," and English blacks are the best after all. You may think this experience of mine worth recording in the valuable "B.B.J," which, along with the *Record*, I consider are undoubtedly the best bee publications, and I read most of the foreign bee journals. —F. S. F. Jannings, Yorks.

PREVENTING DISEASE.

[8749] Kindly allow me to correct an error in my communication of last week (No. 8741), which ordinarily would be of no moment, but in such a matter as is there discussed facts are imperative. The error is in the number of stocks, mostly diseased; instead of sixty it should read "forty."

I would also like to add another item with regard to my treatment of stocks, which I consider of great benefit. In the early spring and before it is safe to venture on transferring, I take a clean, dry floorboard, make a fire of brushwood, and hold the floorboard over the fire for a short time, then, when cooled sufficiently for the bees to stand the heat, lift the stock bodily from the stand in use, and place it on the warm stand.

This operation is carried out in February, the shifted floorboard is then scraped and burnt in the same way, and so on throughout the whole apiary. Many of the floors will be found covered with debris, and also quite wet in places. This treatment, I am convinced, is a great help towards a healthy condition of stocks.

With reference to the criticism of "Bacillus, Pirbright" (page 246) of Mr. George's opinion as to my treatment preventing disease, he is, to some extent, correct in that I "believe in taking all possible precautions against disease," but I disagree entirely with his opinion that the healthiness of our apiary is partly due to immunity from attack.—James Lee, Fulbourn, Cambs.

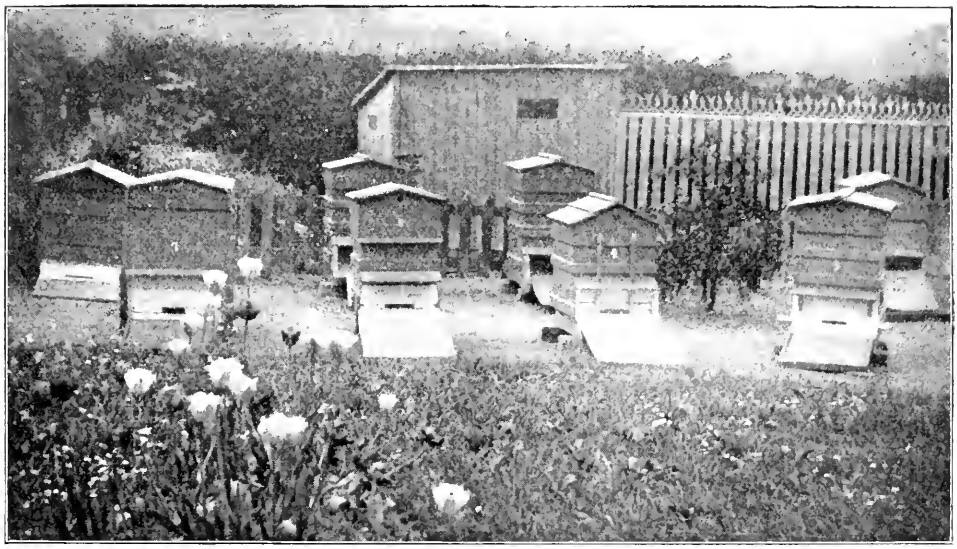
THE SEASON IN LANARKSHIRE.

[8750] On looking over my daily notes

as to the weather conditions during the month of May, I find that they are about as bad, if not worse, than in April, and have come to the conclusion that fortunate is the man who has had a swarm either in May or until date of writing (June 8th), certainly no one has had one in this district. We had thirteen full working days, seven partial, and eleven when not a bee was to be seen. The prevailing high gusty winds have done considerable damage to fruit blossom, and now that hawthorn is in full bloom, I am just afraid that the flow will be nearly a failure; it certainly will if the same conditions prevail as we have experienced ever since June came in; during the last four days the wind has been blowing a hurricane, accompanied by heavy showers of rain. I went up Clydeside two weeks ago expecting to see fruit trees in full bloom, but was disappointed, as little forage was in evidence. I remarked the scarcity to a native and was told that a "bittir tick o' frost in the mornin' and then high cauld wind durin' the day did all the damage." Most of the bee-keepers around here had supers on in expectation of the honey-flow, but I found two still feeding, the reason for this being, in one case, the bee-keeper had made an artificial swarm, in the other, scarcity of bees.

Might I ask if there will be any danger in my taking the bees to the heather this year, almost to the very spot where so many hives returned diseased (in fact, one or two having died out there) in the fall of last year. Personally, I fancy that by having a change for a year will be the wisest plan, as one cannot be too careful; as often as not it is small matters such as this that lead to disaster. I am at present advocating a change, and think that my other bee-keeper companions will agree. I enclose a photo of a corner of my apiary, which may be of interest to you. It was taken early in June. Trusting that very soon the weather will take up and allow the weak stocks to get up their strength before heather time.—J. R., Blantyre.

[The danger, if any, is likely to arise more from possible contamination from other hives, than from their being placed near the old location.—Eds.]



A CORNER OF MY APIARY.

VAGARIES OF SWARMS.

[8751] Will you kindly allow me a little space in which to relate the experience I had of the vagaries of swarms this last week. I have an apiary of ten hives (nine Italians and one black). One of the Italian stocks swarmed on the 13th inst., which ended in the usual way by being captured and placed on the parent stand, the latter being removed to a new location. About ten minutes later, on examining the old stock, you can judge of my astonishment on finding quite half-a-dozen virgins roaming about on the combs, all of which I destroyed, except the best one. On the 14th, my only colony of blacks swarmed and took possession of the last-mentioned hive of the Italians now containing the spared virgin Italian queen. This stock threw a swarm yesterday (the 18th), and I examined it immediately again to see if there was any fighting, but the bees had united peacefully. I searched for and found the black queen,

and returned her to the old stock, but before doing so I examined her hive and found about half-a-dozen black virgins actually on the combs, all of which I destroyed. I may say that about an hour after the black swarm had joined the Italian (parent) stock there was about a handful of dead bees cast out. On the 15th, again examining the Italian hive now also containing the black swarm, I found another black virgin keeping company with the Italian virgin. True, they were on opposite sides of the combs. Another interesting part is, on examining the Italian swarm I found the old Italian queen, together with a black virgin, on the combs without the least sign of trouble.

I may say that both stocks in question were extra strong before swarming: both swarms were good ones, and left the parent stocks still on ten frames and full up in supers.

I wish to relate these facts, as had I not examined the parent stock of Italians and if the black virgin had superseded the Italian queen, I would be totally in the dark regarding same, and unable to account for it later on, and all my records of queens, which I carefully keep, would be upset.

Can any reader throw light on this entire mix up, as I am thoroughly convinced that the virgins left with the swarm the same time as the black queen, as I was on the spot when it swarmed. Some readers may remark: "He may be a beginner, and has mistaken workers for queens," but I can only reply that it is quite true I am a beginner, but for all that I quite well know what a queen is.

I may just as well relate another experience I had on the 16th inst. I was given a black swarm by a friend, which I brought to my own apiary. After the bees had all entered the hive they immediately rushed out again and separated into three lots and entered three of my hives. I understand they came out because their queen was not with them, but I cannot understand why they were received into the other three hives without the least sign of resistance on the part of the inmates of the latter. I think it interesting to give publicity to these facts; it upholds the saying that "Bees do nothing invariably." Perhaps some other beekeeper will give his views on the matter.

In conclusion, I may say that all my hives are strong and headed by queens now in their second year, and giving a good account of themselves.—JOHN E. JAMES, Pontardulais.

TREATING "ISLE OF WIGHT" DISEASE.

[8752] I think it only right you should know that the notice of my "Isle of Wight" remedy you so kindly inserted in the "B.B.J" simply inundated me with letters—far more than I was able then to cope with.

Perhaps, through the medium of your columns, I might ask for a little patience on the part of those who have not yet received their samples.—A. H. BOWEN, Coronation Road, Cheltenham.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Increase and its Prevention.—Twice already in June "B.B.J.," and once in May *Record*, I have dealt with the subject of increase, and yet there is much to be said. How they do it in America, the extracts being all from *Gleanings*, may prove interesting. Dr. Miller says—"How nice it would be if you could just divide a colony into two, three, or more parts without having most of the bees go back to the old stand. Well, you can do that very thing if you take a colony from the home-apiary to an out-apiary. Then you can bring another colony from the out-apiary and divide it up in the home-apiary. Of course, if you have no out-apiary, you can shut up the bees for about three days, or you can close the entrance with green grass or leaves and let the bees dig their way out." [You are right.—Ed.]

Here is a plan to prevent swarming. (Dr. Miller again.) "It is simple and has proved successful in the hands of many who work for extracted honey. When swarming time comes put the queen in the lower story with one frame containing a little brood, and fill up the hive with combs or foundation. Over this put an excluder, and over this a second story with the rest of the brood. Ten days later destroy cells in upper story. These upper combs will now become extracting combs."

[The editor commends this plan, too, and says "the principle is correct."]

Mr. Townsend makes his increase (?) by saving his weaklings in spring as follows:—"We unite our weak colonies with our very best ones, setting one above the other without excluder, at the same time equalising both lots in regard to stores. Later on, when it is ascertained that the queen is in the lower story, she is confined there, a set of extracting combs are placed above, and on top of this the set of old brood combs. In eight days the brood will be all capped over in the upper (queenless) apartment, and in two more days ripe queen-cells will be formed. On the tenth day this set of combs with the brood all sealed, containing either cells or a virgin, is placed in a new site and allowed to build up for the winter."

"Swarming-fever prevention is secured by giving the more populous colonies *an abundance of comb room*, so that they will never feel the least bit cramped for room. This is the key to swarm prevention. More and more each year we are practising giving a set of empty combs to each good colony some time previous to the opening of our main honey-flow. The handling of the surplus receptacle during the honey-flow is worked on the plan of giving plenty of room during the first three-fifths of the season, or allowing the remaining two-fifths of the honey-flow for finishing."

Mr. Wilder, in the warm South, gives his mode of procedure:—"In early spring, when we find a colony building queen-cells, it is divided into two equal parts, and the queenless half is left on the old stand. Then the open space in the hive bodies and supers is fitted with ready-built combs, or frames containing full sheets of foundation. On our next round the divisions are examined and the weaker ones are replenished with frames of sealed brood from colonies that can best spare it, and all are given storing room, as they need it. More general increase is made near the close of the summer, and nine or ten days after the divisions are made (which is done as in spring) we make a special round and see that all queenless ones have at least a good queen-cell. Only the strongest colonies are divided, and those richest in stores, so that no feeding will be necessary."

"Swarming is prevented by the early division of the strongest stocks as noted above. In spring, too, very strong colonies are elevated on two $\frac{7}{8}$in. strips cut 20in. long. This gives good ventilation and allows the bees a good clustering place at the bottoms of the frames. Early, the queen, if she pleases, may occupy the first super, which is left on with some honey all the winter. To this, on successive rounds, additional supers are added; queen-cells, where found, are cut out."

Mr. J. E. Crane, in the East, says:—"In every yard there are some colonies that are very forward—more so even than is desirable, in order to secure the best surplus. I know of no better way of making increase than by taking from such a comb of hatching brood and bees. Confine the bees for a day or two to the hive or throw weeds over the entrance. Give them, at the same time, a comb of honey and a brood comb, and a day later a queen-cell nearly ready to hatch. Brood combs may be added from other extra strong stocks as fast as their strength will admit, and you will soon have a colony capable of storing considerable surplus in a favourable season."

"When desiring prevention, we make use of all those measures that tend to discourage swarming, such as giving abundance of ventilation, shade, room for the queen to lay in the brood chamber, super room for storing surplus, with bait sections, as well as the proper manipulation of the supers to stimulate to the utmost the storing instinct. It is also a decided help to destroy drone brood. Where colonies persistently prepare to swarm I would shake at once on clean worker combs. Return the supers to the shaken bees. The absence of brood will cause them to give up thoughts of swarming and the half-filled supers will stimulate the storing instinct, so that you will have them under control for the season."

Queries and Replies.

[8654] *Non-Swarming Bees.*—About September, 1910, I had some bees given me which I put in a new ten frame hive, and fed with candy during winter. During 1911 I did not have a swarm, and got very little surplus; I took two frames out of brood-chamber, replacing with new ones, as the bees had plenty of stores. In 1912 they did not swarm to the best of my knowledge, though the stock was strong. I put on twenty-four sections and ten shallow frames. It was a bad season, as you know, but I took about 20lbs. of honey, and fed the bees with candy during the winter and syrup in spring. This season they looked like swarming several times during the past fortnight; however, no swarm has come off. I put on a rack of sections about three weeks ago, and the bees are well up in them. To-day (June 17th) a bee-keeper friend called upon me and examined the frames, and said they contained a lot of syrup—that I had evidently fed too long. But there was a great quantity of bees, and as I had a new hive on the spot we decided to divide the stock; so put the new hive on the old site, moving the old hive about a yard We took out seven frames with brood, and placed these in the new hive, with three new frames, leaving three frames with brood, and the queen and seven new frames in the old hive. The workers returned to the old spot, but apparently soon found out something was wrong or a change had been made during their absence. I saw some go straight in with pollen; during the afternoon and early evening there were numbers of bees on alighting-boards of both hives, but by dusk all had gone in and apparently settled down. I left the rack of sections on the old hive, and presume the bees will go down and draw out the new foundation. There, of course, would not be a queen in the new hive. Will the bees rear one, or what is likely

to happen? Would it be policy to put on the new hive a super with ten shallow frames in about a week or so? Would you be kind enough to say if what has been done is right. I know you are willing to help a lame dog over the stile, hence my asking so many questions. Pleased to say I find very useful information in the "B.B.J."—J. T. B., Glinton.

Reply.—You took out too many combs from the old hive: one would have been sufficient with the queen. The section rack should have been put on the new hive. The old stock will not work up as well as it should, having been depleted of flying bees and too much brood.

[8655] *Failing Queen.*—When going through one of my hives yesterday, I was rather surprised to find the stock of only medium strength, and on further examination I found several frames filled up with honey. Two frames had hatching bees, half of which were drones and half workers, although all cells were worker cells. Another frame contained eggs: a few were laid correctly, resting on the bottom, the rest were laid anyhow, some just inside the cell, several had two and three in a cell. I also found one queen-cell almost finished, but nothing in it. I had a good look for the queen, but failed to find her. I think perhaps the bees were queenless and had a fertile worker laying, but her eggs would not hatch workers, would they? Will you kindly give me your advice as to the best way to put matters right. Wishing the "B.B.J." continued success, and thanking you in anticipation.—J. Watson.

Reply.—The bees have a failing queen and are preparing to supersede her. Introduce a good fertile mother, first finding and killing the old one, and all will be well.

[8656] *Clipping Queen's Wings.*—I see in the "A.B.C. of Bee Culture" that it is recommended to cut the wings of queens to prevent risk of losing swarms. Will you kindly let me know if you think this course involves any pain to the queen. If not, it seems a very good method for those who, like myself, are away from their hives a good deal, to adopt.—F. W. White.

Reply.—Although it does not involve any pain, as only the tip of the wing is cut off, we do not recommend cutting the queen's wings for several reasons.

[8657] *A Beginner's Difficulties.*—I have just started bee-keeping, and find many difficulties arise, and as you so kindly offer advice through the medium of your journal, I venture to avail myself of same although a new subscriber. I have been studying the "British Bee-Keepers' Guide," and think I have fairly got a grip of the subject, but unfortunately, I got my bees first, and that is how the trouble arose. I must tell you I live quite in the country, and do not know of anyone within a three-mile radius who keeps bees. The nearest place is a neighbouring village, and there I found a few bee-keepers, but their ignorance on the subject is simply staggering. I was offered four hives in the spring and expected to find them in good order. When I went for them, however, only one stock was alive, and that was in a brood chamber, with frames apparently tossed in. It had some sort of a section rack on top, and the whole covered with a quilt and a piece of wood for a roof. Of course, the bees had built combs anyhow, and it was impossible to remove the same for examination. I watched the bees and found them busy carrying in pollen, &c., so concluded there was a queen. I tried to transfer them into my hive by placing them over the frames as described in "Guide Book," page 150, but found they still kept to the old hive, and were building new combs therein, so I moved the American cloth, and left them over the frames, which they quite cover. They have been thus for about a fortnight, and are still filling up the old brood-chamber, and leaving the nice new frames religiously alone, and I judge them to be a fairly strong colony. Now if you will be so kind as to tell me—(1) Shall I leave them alone or place the old hive as a brood-chamber at the bottom of a frame-hive with shallow frame box over, just for the season, meanwhile starting another hive from a bought swarm, uniting the two for the winter; (2) Shall I feed them now? There is, of course, plenty of clover and other flowers about until the hay is cut. I did give them stimulating syrup at first, but have discontinued.—Mrs. M. M., Montgomery.

Reply.—(1) Leave the bees alone now, they will work down all right when they have filled the top hive with combs. (2) Do not feed now.

[8658] *Bees Casting Out Immature Brood.*—I shall be grateful for your advice. About ten days ago one of my two stocks of bees began throwing out larvae, and young bees in every stage. These were all alive and seemed perfectly healthy. I fed the stock with summer syrup, and they seemed to quieten down. The weather was so stormy the first few days that I could not thoroughly inspect them, but I did so last week, and found still some larvae, pure white, in different stages, the capping of some of the cells with large larvae in was broken, there were plenty of unsealed stores, though these may have been syrup, and there was also a small amount of sealed honey. There is still some

brood, and young bees are hatching out, and there is some larvæ only about the size of a pin's head. On Friday last the bees seemed very disturbed, and a small number of them clustered on a neighbouring bush, making a cluster not much larger than a tennis ball. I shook these into a skep, but there was no queen with them, and the next evening they returned to the hive. I should be very glad if you would tell me what to do. The other stock is extremely flourishing, nine frames crowded with bees, and working well. I shifted both stocks three weeks ago, into clean hives, painted with Ayles's "Isle of Wight" Cure five days previously, as there has been disease in the neighbourhood. All the bees seem perfectly healthy now, and though at the time of the murder of the brood, the alighting-board and hive were much soiled, the combs and inside of the hive are clean. (2) I have to move both stocks at the end of this week about six miles, and propose taking them in a donkey cart. I suppose that the directions given on pp. 118, 119 of the "Bee Guide" are adequate in every way. Will it be necessary to screw the frames down for so short a journey, and is it necessary to go after dark, or will early in the morning do, if I nail perforated zinc over the entrances after the bees have gone in for the night?—E. M. C. K., Kintbury.

Reply.—(1) The cause of throwing out the brood is your using the Ayles's Cure too strong. This would also cause the clustering. (2) You should screw the perforated zinc down on to the frames for the journey, and it would be much better to move the bees in the cool of the night than in the morning.

[8759] *"Isle of Wight" Disease and Vagrant Bees.*—I am sending you some dead bees to ask if you think they have "Isle of Wight" disease. They live in our roof—a very large one—where bees have been for many years in spite of all efforts to dislodge them. This month they have been found constantly crawling about, and half dead on the floor of a sort of well in the roof, and we have swept up quantities. We had put cyanide of potassium in the holes they frequent, to try and get rid of them, and at first thought it was the drug which had killed them, but it has long disappeared, and they still go on dying. We have six healthy stocks in the garden, which are working away as usual, and have swarmed normally. The bees in the roof seem to be a different community altogether. I should be greatly obliged for any advice you can give us. We are within sight of the Isle of Wight (about twelve miles), but, so far, have had no sign of the disease.—E. N., Hants.

Reply.—The bees have died from "Isle of Wight" disease.

[8760] *Sowing Clover for Bees on Waste Land.*—Will you kindly answer the following further queries? (1) Is *melilotus leucantha* (sweet scented Bohkara clover) the melilotus referred to in your reply to my query on page 219? (2) Is there any advantage in sowing white Dutch clover? It is dearer and, I am told, twice the quantity has to be sown per acre? (3) As the ground will not be prepared, should I sow more than 8lbs. per acre (the quantity recommended in the catalogue)? (4) The grass is knee-deep in places. Should I scatter seed on these patches? (5) Would after rain in September be a suitable time to sow?—E. F. L., Lee.

Reply.—(1) Yes. (2) It is better for the purpose you are aiming at, namely, providing forage for your bees. (3) No, it is not necessary. (4) Yes. (5) August is the best time to sow.

[8761] *Preventing Increase.*—I have captured and hived a good swarm of bees and saw the queen, an old one, duly enter the hive. I should be glad if you would answer the following questions:—This queen, being old, is probably exhausted, and therefore should be replaced, so I took a frame from a strong hive, having two queen-cells, and gave it to the swarm, the idea being that the bees will raise a young queen and displace the old one. (1) Am I correct in my surmise? This was done a week after the swarm was captured. (2) I have another stock with queen-cells and drones flying, which looks like swarming. If I am able to catch the swarm, would it be right to find the queen and kill her, and return the swarm to the hive from which they came? I do not require an increase of stock.—F. E. B., Chelmsford.

Reply.—(1) Yes. (2) Yes, after first cutting out all queen-cells.

[8762] *Box Border and Bees.*—Will you kindly inform me if the common box border has any ill effect on bees? I have two stocks, and have also purchased two new swarms this year, which yesterday appeared to be doing very well—plenty of healthy brood and eggs. But to-day I notice a number of bees crawling round the front of the hives apparently unable to fly. On watching more closely it seemed to me that it is when, in flying, the bee comes in contact with the box-leaf that she is affected somehow. My hives stand in a back path, with the box border just clear of them. I have not heard of any "Isle of Wight" disease near here, and do hope that I have not

that scourge in my apiary.—W. T. M., Rochester.

REPLY.—"Isle of Wight" disease is in your district, and it is evident that it is what your bees are suffering from. The box border would not affect them in any way.

[8763] *Bees casting out young brood.*—I purchased a stock of first cross Ligurians in April, the eight frames teeming with bees. They were doing splendidly, so I inserted two frames of foundation, which they drew out into comb. A fortnight ago the hive was full of bees, with a good supply of uncapped honey, every frame, except the two end ones, being heavy with brood, capped and uncapped. I therefore put on the supers. A week of bitter cold weather followed, when the bees could not get out. On June 18th I examined the stock to see what was the matter, as the bees were all busy casting out dead larvæ and young dying bees. I found half the frames empty, neither brood nor honey, and only a little capped brood on the others.

I removed the queen excluder, but left on the sections, and fed every night with syrup. The clover is now in full bloom, and we are enjoying a spell of glorious weather. (1) Have I done right to leave on the sections? (2) What do you think is the cause of the sudden decrease of numbers? (3) How can I get the stock up to its original strength? (4) Unfortunately my landlord will not allow me to keep the bees outside, though we are situated right in the middle of the clover fields, and far from the road. Consequently I have them in a spare bedroom, and have made a small tunnel under the window frame for them to pass outside without getting into the room. After the honey flow is over I thought of hiding them in the fields for the winter. Would it be advisable, and if so about what month should they be moved?—E. S., Rochdale.

REPLY.—(1) Shortness of food was the cause of the young bees being cast out. It would have been better to remove the super for a time, and feed the bees. No doubt with the fine weather they will now do well, but if bad weather returns again, feed them. You can do nothing more to bring them up to full strength. (2) Why not let the bees remain in the bedroom permanently? They will be all right. There would be no advantage gained by putting them into the fields for the winter.

OLD-FASHIONED TEACHING.

A lady correspondent sends the following:—

Recently, in looking over some books, I was much interested in one entitled, "Natural History," published by Darton, Holborn Hill; unfortunately, the name of the author, and date when issued, was not given. My attention was drawn to a considerable portion devoted to the study of bees, and I saw by the copious notes in the margin that someone had been reading it who was very keen on the subject, and evidently thought very highly of the work.

Thinking that I had come upon something of interest, I settled down to read, to find the contents, if not instructive, highly amusing.

Speaking about the three different kinds of bees the writer says: "The queens, which are much larger than either of the former, are still fewer in number. Some assert that there are not above one in every swarm, while others maintain that there are sometimes five or six."

"The worker bees are furnished with teeth, which serve them in making wax, this substance as well as their honey, is gathered from flowers, it consists of that dust which contributes to the fecundation of plants, and is moulded into wax, by the little animals at leisure."

"The bee is furnished with a stomach for its wax as well as for its honey, in the former the powder is digested and concocted into real wax; and is then ejected by the same passage by which it was swallowed."

BANKER AND BEE-KEEPER.

An ingenious swindler of the kind that exist by plundering poor people of their savings has just been laid by the heels in Paris. He is Xavier Valentyns, the director of the Banque Intermédiaire. His bank, he said, was a sort of investment trust as well, and he promised depositors dividends up to 60 per cent. per annum.

All they had to do was to deposit £20. Some of them actually did receive up to 70 per cent. on their money, others less, but the majority, of course, received nothing at all. What Valentyns did was to pay the dividends of a few depositors with the money deposited by others.

With part of the money entrusted to him Valentyns bought a fine estate in the country, where he went in for bee-keeping. Before the court yesterday he pleaded that he had won over 150 prizes all over Europe, and that the farm would become such a success that he could pay all the dividends he had promised with the profits from it.

The court did not appear to think his optimism justified, for it sentenced him to five years' imprisonment and £120 fine.—*Daily News*, June 5.

Bee Shows to Come.

July 1 to 5, at Bristol.—Royal Agricultural Society's Show.—Bee and Honey Section, under the direction of the B.B.K.A. Prizes arranged in groups of counties for associations affiliated to the B.B.K.A. **Entries closed.**

July 17 and 18, at Lincoln.—Lincolnshire Agricultural Society's Show. Honey section, under the management of Lincs. Bee-keepers' Association. Prizes value £30. Open classes for Appliances, Observatory Hives, Extracted Honey, and Sections. Schedules from J. H. Hadfield, hon. sec., Alford, Lincs. **Entries closed.**

July 23 and 24, at Cardiff.—Glamorgan Bee-Keepers' Association, in connection with the Cardiff and County Horticultural Society's Show. Open classes for collection, sections, &c. Schedules from W. J. Wiltshire, Maindy School, Cardiff. **Entries close July 17th.**

July 23rd and 24th, at Wolverhampton.—Staffordshire Agricultural Society's Show. Bee and Honey section under the direction of the Staffordshire Beekeepers' Association. Open classes for appliances, observatory hives, extracted honey, and sections. Schedules and entry forms from C. R. Forse, Hon. Sec., Trentham, Stoke-on-Trent. **Entries close July 5th.**

July 23, 24, and 25, at York.—Show of Hives, Honey, &c., in connection with the Yorkshire Agricultural Society's Show. Liberal prize list. Schedules and particulars from J. Maughan, secretary, Blake-street, York.

August 6th, at Stoke Park, Guildford.—Annual Exhibition of Bees, Wax, Appliances, &c., will be held by the Surrey B.K.A., in connection with the Guildford and West Surrey Agricultural Association. Nineteen classes (five open to all). Many medals. Schedules from F. B. White, hon. secretary, Marden House, Redhill, Surrey. **Entries close July 26th.**

Aug. 7th, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Three open classes; one for single 1lb. jar of honey (entry free). Schedules from G. Richings, 2, Shrubbery-terrace, Worcester.—**Entries close Aug. 2nd.**

August 7th, at Bruton.—The Annual Show of the Somerset Bee-Keepers' Association, in connection with the Bruton Flower Show. Open classes. Schedules from Mr. R. Litman, South-street, Castle Cary, Somerset. **Entries close August 2nd.**

August 13th, at Wye, near Ashford.—Kent Honey Show, 12th Annual Exhibition. Classes to suit all bee-keepers. Splendid prizes; small entrance fees. One 6 guinea and two 5 guinea challenge cups; also a 2 guinea champion silver cup. A new class this year for six 1lb. of extracted honey, put up in short bottles, or other vessels, suitable for getting honey out of easily, and for sending honey away in. Open to United Kingdom. Two silver medals best exhibits of bee appliances. Twenty-five different classes to enter in. Staging and repairing carried out by experienced men. Prize schedule and entry form free on application to Mr. Alfred Lepper, secretary, Kent Honey Show, Scotton Street, Wye, Kent. Prize schedule and entry form will be sent to all exhibitors of last year without application.

Sept. 24th and 25th, at Kendal.—The Annual Show of Honey, Wax, and Appliances of the Cumberland and Westmorland B.K.A., in connection with the Northern Counties Fruit Congress, in the Market Hall, Kendal. Eleven open classes. Liberal prizes. Note.—All prize-money will be paid on second day of show. Schedules from G. W. Avery, Wetheral, Carlisle, or Geo. Chatham, Low Green, Staveley, Kendal.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

HOPEFUL (Andover).—*A Small Swarm.*—It was not a swarm but a cast, and the bees suffered from want of ventilation.

ROVA (London).—*Dead Queens Cast Out.*—The large queen is a fertile one, and has been injured in some way; the other is a virgin.

G. B. (Banbury).—*Dead Queen.—Bees and Laurel.*—(1) Owing to your not packing the queen properly, it arrived crushed out of all recognition, therefore we cannot give any opinion. (2) It is a well-known fact that bees work on the common laurel in the way you describe.

J. M. (Fishponds).—*Disinfecting Hives.*—The safest method of disinfecting is to scorch the insides of hives with a painter's spirit lamp, and also paint the outsides.

ANGLIAN (Neor Valley).—*Formaldehyde or Formalin for Foul Brood.*—(1) We do not know the strength of the Formalin you purchased, therefore we cannot advise you. It is a proprietary article, and the chemist in question sold it to you instead of formaldehyde in order to secure more profit. (2) Scorch the articles with a painter's blow-lamp; this is the safest method of disinfecting.

W. (Worcester).—*Bees Propolising Bee-escape.*—The escape is evidently not a genuine "Porter" bee-escape, and the springs are too strong for the bees to push through. This is the cause of their propolising up the exits.

H. (Chatham).—*Makers of Cowan Extractor.*—The address you require is W. P. Meadows, Syston, Leicester.

T. R. E. (Lynton).—*White-eyed Drone.*—(1) The bees are not affected with "Isle of Wight" disease. (2) The drone is an albino, which are not at all uncommon.

W. WRIGHT (Stourbridge).—*Honey Sample.*—The honey is quite good enough to show. It should be staged in the light honey class. Source is clover.

W. A. C. (Castle Cary).—*Flies, Bees, and Laurel.*—We cannot say whether the flies have been poisoned. You could ascertain the cause of their death by sending some to the Entomological Department of the Natural History

Museum, South Kensington. The laurel does not poison bees, as they cannot get sufficient nectar from the stipules near the midribs of the leaves to do them any harm. We have repeatedly seen bees taking nectar from laurel leaves without injury.

Suspected Disease.

W. D. (Hersham).—There are signs of "Isle of Wight" disease in both lots of bees.

A. J. H. (Beckley), R. K. (Maybole), and C. A. S. (Shrewton).—The bees have died from "Isle of Wight" disease.

C. H. T. (Bristol).—It is impossible to tell from the small piece of comb sent whether there is disease or not.

BATH (Somerset).—It is "Isle of Wight" disease. No cure has yet been discovered.

W. E. G. (Dulwich).—(1) The bees are affected with "Isle of Wight" disease. (2) It is possible, but improbable, for them to become infected in a very short period.

CONSTANT READER (Bridgnorth), J. P. (Llandaff), and S. P. S. (Essex).—The bees are affected with "Isle of Wight" disease.

Honey Samples.

HONEY BEE (Devon).—The honey is of very poor quality, and we should say of foreign origin.

W. J. B. (Hailsham).—The honey has fermented through being kept in a damp place. If well boiled it will do as food for bees.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ½in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

HIVES, six new, well made, painted two coats, 9s. 6d.; lot, 55s.—104 Grosvenor-road, Harborne, Birmingham. v 3

4-FRAME NUCLEI, Carniolan hybrids, brood in all frames with young laying queen, 17s. 6d. each.—EVERETT, expert, Rosebank Apiary, 40, Linden-street, Leicester. v 99

FIVE strong standard frame hives for sale, equal to new, 10s. each.—Apply, JAMES, Alexandra Park, Penarth, Glam. v 100

PURE CAMBRIDGESHIRE HONEY, 1913, chiefly white clover, water white, density very thick, flavour good, 75s. cwt., 28lb. tin, 20s., f.o.r.; sample, 2d.—J. CUNNINGHAM, Stetchworth, near Newmarket, Cambs. v 9

HONEY EXTRACTOR, perfect, 12s. 6d.; ripener, new, 8s. 6d.; Brice's 1-frame observatory hive, as new, 18s.; all clean and healthy.—WHEATLEY, Spa Apiary, Hinckley. v 11

GOOD SWARM, on nine frames, 18s.; send box.—ANTHONY, Stamford Bridge, Yorks. v 7

TWO healthy stocks, in W.B.C. hives, spare Colonial hive, all accessories and appliances, £3 10s., or 30s. each stock.—SALMON, 92, East-hill, Colchester. v 1

CLEAN, healthy hives, 3s. 6d.; section racks, 8d.; queen excluders, 6d.; geared extractor, 18s.; lot sundries; take honey in exchange.—J. BOWDEN, Broomhill, Witley, Surrey. v 10

HIVES, Conqueror, nucleus, supers, combs, appliances, cheap; state requirements.—HULBERT, Hermitage, Worcester. v 75

FEW NATURAL SWARMS for sale, disease unknown, 15s. each, or by weight.—WM. BECK, Airton, Bell Busk. v 92

OVERSTOCKED.—Three strong, healthy stocks of bees, on ten frames, young queens, 25s. each; can be inspected any time.—T. WOOD, 20, Shirley-street, Saltaire. v 84

FOUR strong stocks, in bar frame hives, several secondhand empty hives, and swarms, free from all diseases, cheap.—BRADSHAW, Allerston, Pickering. v 81

SEVERAL fine 1913 fertile English black queens, 3s. 6d. each.—ROPER, Thorpe-on-the-Hill, Lincoln. v 79

MAN (47), experienced in poultry and apiculture, requires engagement, capable of management in either branch; highest references.—Box XX., "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 69

SEVERAL bar frame hives, as new, perfectly clean, 7s. 6d. each.—DABBS, Brandwood-road, King's Heath, Birmingham. v 63

COMPLETE volumes of "Gleanings," unbound, for 1908, 1909 and 1912, price 3s. 6d. each, post free.—MANAGER, "B.B.J." Office, 23, Bedford-street, Strand, W.C.

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

STRONG NATURAL SWARMS, 14s.; 4 and 3-bar nuclei 1913 queens, 16s. and 13s.; fertile queens, 5s.; virgins, 2s. 6d.—WOOD, Ash Grove, Bishopton, Ripon.

BOWEN'S NOVEL CASES, instantly fitted, quickly sold, 5s. 9d., 9s. 6d. gross.—CORONATION, Cheltenham. v 12

BOOTS at Factory Prices. New catalogue, containing hundreds of bargains, now ready; a postcard brings it free.—Write now to FRED FOLKARD, North-street, Scarborough. v 2

BETTER THAN SWARMS.—4-frame stocks, 15s.; 6-frame ditto, 21s., including 1913 fertile queens.—AVERY, Deverill, Warminster. v 8

WANTED IMMEDIATELY, 28lb. tins and a few dozen 1lb. jars finest honey; send price and sample.—WILLIAMS, 4, Victoria-arcade, Swansea. v 4

SECTIONS WANTED, best quality, for cash.—SMITH and CO., 17, Cambridge-street, Hyde Park.

36TH SEASON.—Swarms, 3-frame nuclei, headed by imported Italian or other queens, Queens:—Italian, hybrid, and British. Rhode Island Red fowls.—Particulars, apply, ENOCH WOODHAM, Clavering, Newport, Essex. v 94

HEALTHY NATURAL SWARMS, 15s., safe delivery.—BRADFORD, expert, Tibberton, Droitwich. v 13

Editorial, Notices, &c.

RICHMOND AND DISTRICT B.K.A.

This Association, which is but a few weeks old, held its first honey show in conjunction with the Horticultural Society's Show in the Old Deer Park, on Wednesday, June 25th, the show being formally declared open by Mrs. Cave, in the absence of Geo. Cave, Esq., K.C., M.P., the President of the Association. A very creditable lot of exhibits were got together, considering the very short time the Association has been in existence.

The first prize for four jars of extracted light honey was awarded to W. S. Halford, West Wratting, Cambridgeshire, who also secured first prize for beeswax. The first number of entries constituted a record. The County Agricultural Society made a grant of £20, which enabled the Association to reduce the entrance fees, while, at the same time, the prizes offered were much more valuable than in former years. The exhibits were nicely staged by Mr. Chas. H. Heap, of Reading, the Association expert, and the general effect was enhanced by the use of sweet pea blossoms, the gift of Messrs. E. W. King and Co., the world-famous seed growers of Coggeshall, who also very kindly staged them. Much of the success of the show was due to the exertions of Mr. F. E. Lennox-Brown, who, on the show day, had the assistance of several members, who acted as stewards. As will be seen from the illustrations, the judge was Mr. W. Herrod, the awards showing wonderfully consis-

Photo by F. E. Lennox-Brown.

MR. W. HERROD, JUDGING HONEY EXHIBITS.

for sections was awarded to J. G. Romer, Kew Gardens.

The arrangement of the show was placed in the hands of Mr. A. G. Gambrill, the expert of the Association, who staged the exhibits, and during the afternoon had the honour of explaining the uses of a frame to H.M. Queen Amelie of Portugal, who, accompanied by the Mayor of Richmond (Alderman Bisgood), went the round of the show.—J. Romer, Hon. Sec.

ESSEX B.K.A.

SUCCESSFUL ANNUAL SHOW.

The Essex Bee-keepers' Association's annual show, held in connection with the Essex Agricultural Show, at Braintree on June 11th and 12th, created unusual interest in the county, and, notwithstanding the backwardness of the season, the tent judging. Speaking generally, the honey, considering the season, was all very good, but unfortunately one excellent exhibit of comb honey was disqualified on account of over-lacing. This error should not have occurred, as attention was called to the subject in the last annual report. For a county show, the granulated honey was admirable, while shallow frames exhibited were excellent. The exhibits of wax were small in number, but of capital quality. Mr. Stoppard's observatory hive, which took a first prize, attracted a great deal of attention throughout both days. Mr. C. S. Montefiore, the popular president of the Agricultural Association, paid several visits to the tent with Mrs. Montefiore, who is herself an experienced bee-keeper; they expressed deep interest in the work of the Essex B.K.A.

Lectures on bee-keeping, accompanied with demonstrations of bee-driving, were given by Mr. Herrod, Secretary and Lecturer to the British Bee-keepers' Association, and Mr. G. R. Alder, secretary to the Essex Bee-keepers' Association, and were listened to by very large and interested audiences, as shown by the photograph taken during one of the lectures. Five candidates submitted themselves for the preliminary examination for the expert's certificate of the British Bee-keepers' Association. Our final illustration shows Mr. Herrod examining a candidate on the second day. The following is a list of the awards:

Collection of Hives and Appliances.—1st, James Lee and Son, George Street, Uxbridge.

Frame Hive for General Use.—1st, James Lee and Son.

Three Shallow Frames.—1st, F. Bird; 2nd, Wm. H. Stoppard; 3rd, R. E. A. Garrett, Witham.

Six 1-lb. Jars Granulated Honey.—1st, F. Bird; 2nd, H. H. Bowen, Cheltenham; 3rd, Rev. F. E. Crate.

Single Jar Extracted Honey.—1st, F. Bird; 2nd, Wm. H. Stoppard; 3rd, R. E. A. Garrett.

Beeswax.—1st, Mrs. M. M. Walford, Layer-de-la-Haye; 2nd, F. Bird; 3rd, W. S. Halford.

Honey Cakes.—1st, F. Bird.—*Communicated.*

OPEN-AIR LECTURE AT BARNET.

The Barnet and District B.K.A. was fortunate in securing the services of Mr. W. Herrod as lecturer and demonstrator at an open-air meeting, held at Wood Street, Barnet, on June 25th. Despite a very threatening sky and even a smart shower of rain, a large and appreciative audience were present, due, no doubt, to the popularity of the lecturer, many coming from the outlying villages to hear and see. A very interesting hour-and-a-half was spent in listening to his graphic description of bee-keeping, ancient and modern, the work and life of the bee, the pleasures and profits of bee-keeping, and its pains and drawbacks, all told in Mr. Herrod's inimitable style. At the close of the lecture, numerous questions were put to and answered by the lecturer, and the meeting terminated with a vote of thanks to Messrs. W. Cutbush and Sons for the use of the ground, and to Mr. Herrod for his instructive address.—G. James Flashman, Hon. Sec., Barnet and District B.K.A.

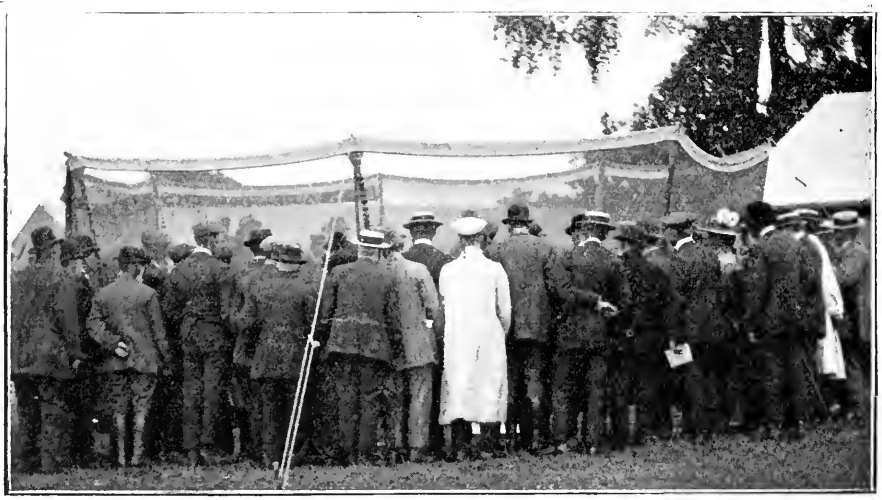


Photo by F. E. Lennox-Brown.

AN INTERESTED AUDIENCE AT THE BEE DEMONSTRATION.

Observatory Hive.—1st, Wm. H. Stoppard, The Brook, Tiptree.

Six 1-lb. Sections.—1st, F. Bird, Little Canfield, Dunmow; 2nd, H. Seabrook, Marks, Braintree; 3rd, Rev. F. E. Crate, Salcott, Virley, Witham.

Three 1-lb. Sections.—1st, F. Bird; 2nd, Mrs. E. Nash, Dunmow; 3rd, H. Seabrook.

Single Section.—1st and silver medal, F. Bird; 2nd, E. T. Cock, Finchingfield; 3rd, H. Seabrook.

One Shallow Frame of Comb Honey.—1st, F. Bird; 2nd, Wm. H. Stoppard; 3rd, Mrs. Nash.

Six 1-lb. Jars Extracted Honey.—1st, F. Bird; 2nd and bronze medal, Wm. H. Stoppard; 3rd, W. S. Halford, West Wratting.

AMONG THE BEES.

By D. M. Macdonald, Banff.

DEALING WITH VICIOUS BEES.

Several letters reached me during the winter asking me to deal with this subject fully, when opportunity offered. To many afflicted with very cross-tempered bees the subject may bulk very largely indeed. One whom I advised to requeen his colonies from a gentle strain, because as long as he kept the present queens he would have ill-tempered bees, replied with a wail ending with "How?" He said that the bees rushed out in clouds before he or other bee-keepers he had called in approached within several yards of the hives. Smoke was no remedy, because they did not allow any intruder to come so near as to apply a blast from a smoker. When by care and stratagem one more daring than the others, at an early hour in the morning, when decent people (and decent bees) are sound asleep, did accomplish this feat, and come right up to the door of the citadel, he covered the ground back to shelter at from ten to twenty times the rate of speed he had approached the hive, followed by a score or more of venomous amazonian warriors, determined to do or die! Feeling for this sorely afflicted bee-keeper, I sent him not only my sympathy but also the substance of the three following plans for mastering his fierce antagonists, and converting them to a saner form of procedure.

Examining Vicious Bees.—The kind I refer to are the extra-vicious bees found only on very rare occasions, which show temper so much beyond the average, that special treatment is necessary if success is to follow the desired examination. The occasions are so rare that I think little has been written in the past on this head. I would, on approaching the hive, proceed much in the same way as when starting "driving." Puff in a few good, strong streams of pungent smoke at the contracted doorway, and then pound on the skep or frame hive to alarm the bees thoroughly, first shutting them in by placing a tuft of dry grass in the entrance. Generally, after giving them about three minutes to gorge themselves, they submit

Photo by F. E. Lennox-Brown.

EXAMINING A CANDIDATE FOR THE B.B.K.A. EXPERTS' CERTIFICATE.

to handling. Should, however, there be a desire to see the queen, perhaps, to depose her, if the colony is a powerful one, it is advisable to get rid of some of the bees temporarily, and this can be done by placing another body box above the frames of the regular brood-body, when a large proportion of the bees will ascend there out of the way of the smoke. Shift these to one side to give scope for handling frames, when any necessary observations may be carried out. I never did the deed, but if a desperate case arose, I feel certain that a resort to the old method of stupifying by "puffball" would be thoroughly justifiable. In this case carry out the operation mildly, make a rapid search for the queen, pinching her when found, and re-queen the stock from a gentle strain. Queens breeding such abnormally irritable bees are best deposed, as their progeny may become a very real danger to the neighbourhood. In all my experience I have only encountered two extreme cases, one in my own apiary, and the other belonging to a bee-keeper in the suburbs of a town. He described them as a "holy terror" to all coming within fifty or more yards of the hive, and he "sulphured" them.

Driving Vicious Bees.—My correspondent "did not care for puff-ball, and did not want to handle frames," whereupon I sent him the following plan. Smoke the bees well, shutting them in with moss packed in the entrance. Gently remove the roof and all coverings but the quilt; then place a W.B.C. body-box with a queen excluder tacked below, on top of regular brood-body, first smartly removing quilt, and at the same time and with same movement laying empty box above. Temporarily remove outer covering with any lifts, and then drum on outside and ends of body-box, keeping it up until bees have all gone upstairs. A hasty glance below the temporary brood-body, where the excluder zinc has been placed, will almost to a certainty reveal her majesty, because the excluder has acted the part of a riddle, letting only worker bees through and effectively shutting out queen and drones. Instantly seize and pinch the condemned queen. Remove the moss from the entrance and leave the bees to descend at their leisure, which they are certain to do soon, because their brood is all below.

My friend could not pluck up courage to carry out this suggestion. Ultimately, on my further suggestion, he had the vicious lot carried to a quiet corner, placing a nucleus lot on the stand with the queen caged for forty-eight hours in such a way that she could be liberated by the bees, after which he had a normally tempered lot which never gave him any trouble when manipulating them.

Spraying Vicious Bees.—I like to note where ancient and modern practice agrees. Virgil's "sweetened water" has recently been resurrected in America, and several leading bee-keepers record that they use it. An Australian writes as follows: "To remove a queen from an irritable colony, a sprayer same as a hairdresser uses can be purchased for 3s. 6d., and if the spray is directed on the bees, it gives them so much to do cleaning up that no fighting will take place." Last summer, while visiting an old bee-keeper, he used a mouth sprayer liberally on the bees—a vicious lot he informed me—with such effect that although the evening was unfavourable, no stings were received while we were examining the hive. Another bee-keeper, expecting a lady to purchase a skep from him, just before she arrived, went into the house and took out a cup of thin sugar and water, which he dexterously sprayed over the upturned seams of bees, gently returning the skep to the floor-board. A little later the lady, with very little smoke, made an examination which perfectly satisfied her, and a bargain was struck. Those who have done much in "drumming" driven bees, know that on a dull unfavourable evening, when bees would otherwise sulk, some sweetened water sprayed into the skep greatly expedites the work of driving the bees from the full to the empty hives.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

ROSS-SHIRE NOTES.

[8753] The month of June, although at times very cold and wet, has been decidedly more favourable than the corresponding period last year.

Colonies are storing fast, and additional supers must be given in anticipation of a heavy flow from white clover, now in full bloom. This last day of June is intensely hot, and there is quite a boom in the apiary.

Carniolans are strongly in the lead. My one colony of this variety was occupying three full-depth chambers with brood and eggs in nineteen frames, when they were found building queen-cells in preparation for swarming. All but one frame of brood was taken away, and the hive filled up with comb foundation.

The removed brood, with adhering bees, was split up into three strong nucleus

colonies, each headed by a young fertile Banat queen. These young colonies should soon be ready for supering, while the old stock is still covering eleven frames and storing fast in the supers.

As formerly, I prefer to give the empty section rack always above the one already on. This is less trouble than the usual plan of raising the half-filled super. Another advantage is that room can be given before the bees actually require it, and a stock supered with four or five racks, while also having ample bottom ventilation, is less likely to swarm than one that is allowed to get cramped in any way.—J. M. Ellis, Ussie Valley.

THE "KENTISH" CURE FOR "I.O.W." DISEASE.

[8754] I read with very great interest the account, in the Journal of the 12th inst. (page 235), of Mr. Wigley's endeavours to find a cure for "Isle of Wight" disease.

While I rejoice to add my humble voice to your commendation of Mr. Wigley's praiseworthy efforts, there is a weak point in his statement of the results obtained, and I feel sure he will realise that, in pointing it out, I have only in mind the object of warning him against a too premature confidence in the efficacy of his remedy.

Quinine comes almost naturally to the mind of one confronted with this baffling disease. A tonic seems to be the very thing! My own feeble experiments with the drug were not a success, and what I want to point out to Mr. Wigley is that he has, if his statement of losses and survivals is complete, by no means proved that quinine was responsible for the result. If the stocks which had half quinine and half natural stores had survived, the tale would have been different. I am more confident in expressing my view, that the saving of the five stocks was not due to quinine, because it tallies with two experiences that came under my own personal observation.

I think I shall make my point clear, if I say that had Mr. Wigley wintered one stock on sugar syrup, either successfully or otherwise, he would have had much stronger evidence for or against quinine.

What I would submit is, that the saving of those five stocks was due to the removal of contaminated stores, combined with antiseptic treatment of hives and their surroundings. The first experience referred to was that of a lot of driven bees, which, when hived on empty frames and fed with sugar, were suffering from the disease in a slight form. Right down to the close of the honey-flow the following season, they worked well, and threw a swarm. But at the end of August both swarms and parent developed the disease in a virulent form, and died out quickly. Here, I think, is plain evidence that the entire removal of contaminated stores decidedly checked the disease, and had the hives been systematically treated with antiseptic, I incline to the view that it would not have broken out again.

The next instance was an apiary of five hives, all of which were suffering in about equal degree in the early spring. Four stocks had abundant stores in April, while the remaining one had been completely robbed out. Antiseptic treatment was adopted, the hives being changed once a fortnight. The starving stock was fed, first with candy and then syrup. Of the hives with their own stores, two died out; the others recovered in time, but did not build up sufficiently to do any good during the honey-flow. The starved-out stock showed no sign of the disease in a few days after treatment, and built up so well that it provided a good surplus as well as being divided for increase.

On this showing, I commend the following method to any bee-keeper with stocks suffering from the disease.

At the close of the honey-flow, drive each stock into a previously treated hive, box, or skep. Extract the honey from combs, and give them to other stocks to clean thoroughly, taking care that the lots already treated are not allowed access to them. Frames of brood may be given to the so far untreated stocks to minimise losses. After keeping the driven bees foodless for about thirty-six hours, hive them on foundation in thoroughly treated hives and feed up on good syrup. Proceed with each hive until all have been driven and re-combed. If the proceedings are spread out over three weeks, almost all the brood will be cleared out as one goes along, and the last hive may be given a week or so in which to hatch out the remainder. I am anxious not to be too prolix, and, therefore, I take it for granted that the experimenter will take the usual precautions to prevent robbing, and to disinfect surroundings. The ultimate result should be that every scrap of old stores is removed from the apiary. The extracted honey should pay for foundation and sugar, and, after being sprayed with formaldehyde and stored in safety till next season, I do not think any infection would remain in the combs.

Artificial Increase.—Mr. Macdonald (page 241) has surely made a mistake in his alternative method of dividing a hive. He says: "Raise the body-box above the one with queen, and leave it with excluder between. . . till brood in top storey is sealed. Then remove to a new site." I have not quoted him fully, but it matters not. What I want to know is, where is the new queen coming from?—Herbert Mace.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Swarming Vagaries (p. 219).—Swarms sometimes abscond on a hot day following the day of hiving, owing to a too contracted entrance. Is it possible that this was the case with "Constant Reader's" skep? Of course, the bees may have objected to be owned by anyone styling himself "Constant Reader"! Too much entrance is a fault on the right side under the circumstances, and if a swarm be a strong lot, it is better to prop the skep up for a few days until the comb is built.

Driving Bees (p. 219.)—Mr. Wigley's extract from the "Feminine Monarchie" is interesting, as showing that driving is not the modern invention its ignorance amongst skeppists would seem to show. Of course, the object of driving at midsummer was that the bees might re-establish themselves as a swarm, but one cringes to think of the unsealed honey and the slaughtered brood. Perhaps, however, none was wasted, after the fashion of the Ogick (p. 229). It is hard to realise that we are already past midsummer! and that the question of the crop is already settled in many districts, mowing having begun in earnest. The clover was very early with us this year, earlier than I have known it, and the bees made good use of their time. I have only had one swarm so far, and that I discovered to-day (June 30th) hanging on a bough. My bees seem to have had no inclination to swarm, but have gone steadily on with their work, perhaps because I was well provided with hives for their reception.

Fitting Frames (p. 222).—I am afraid that I must declare myself one of the unpractical ones, for I use squared end-bars, and nail into the end grain. But I do not find that the nails pull out. I use two 1½in. round French nails, and they hold like—well, like anything. But I am prejudiced against the dovetailed frame, principally on account of the abominable saw-cut. Does anyone furnish this now with a plain top-bar? Many of my frames are shallow, with wide end-bars, and there is ample wood to nail into. But brood-frames are treated the same, and there is no difficulty; 1½in. nails is the secret, and if there is any skew in the frame after nailing, the right nail is given a trifle more drive to correct it. I used the hook method of wiring for some years, but found it troublesome when cutting combs out of the frame, so abandoned it. It is, however, a splendid method of obtaining taut wires.

"*I.O.W.*" *Disease* (p. 225).—I wonder whether Mr. Kidd would consider as fatal to his theory the fact that disease has undoubtedly reached the North, Scotland, for instance, by means of imported swarms, —a journey far enough for the bees to have consumed their honey. Or does he suggest that the disease obtained a foothold upon the mainland owing to the visits of predatory bees to the Isle of Wight?

Damage to Stocks (p. 225).—Mr. Wilson might avail himself of Ogick methods of dealing with such evilly-minded persons (p. 228), and then, with Dogberry, thank God that we be rid of a knave. But perhaps the *Acocanthus schimperi* tree does not grow in his locality.

Chastity and Bees (p. 227).—One is left to wonder whether the schoolmarm was reproving or condoning Mr. Janning's habits! I remember one very old man who told me he never "smeeaked 'bacca," and when I said, guilelessly, how pleasant it was to see a youth of his years starting life without bad habits, he rejoined with a twinkle, "Neea, ah cheow all mahn!" Speaking for myself, I find a pipe a very present help in time of apiarian trouble.

A Plea for the Skep (p. 236).—Will you shake hands, Mr. Martin? A good deal has been said about the skep from time to time, but I believe there is a growing body of opinion in its favour under certain circumstances. It is not the hive of the specialist, and it may, or may not, be a sealed book to many of its owners, but that it is not unsuited to their requirements, the tale of their profits would show. But I have said all this before, notably in a plea for the skeppist ("B.B.J.," February 1st, 1912). I can only add that I would not assist legislation if I thought that it would result in the wiping out of the skeppist. Incidentally, I would remark the increase in tolerance since the days of which Mr. Martin speaks. The "B.B.J." is sometimes criticised for its attitude, but a careful perusal gives the impression of fairness, and an endeavour to give reasonable place to opinions with which those responsible for it do not necessarily agree. May I plead for increased tolerance all round in the best interests of the Craft.

Queries and Replies.

[8764] *Finding which Hive has Swarmed.*—I took your advice and did not purchase any fresh swarms, as after examining a few of my bees earlier in the season, your verdict was "they were affected by 'Isle of Wight' disease." I wrote to Mr. Bowen, of Cheltenham, after reading an advertisement in your Journal, for a small supply of his remedy, which I gave my bees in soft home-made candy. They certainly benefited by it, and yesterday, when I changed a half-full rack from bottom to top, they seemed well and lively enough, a big colony! Later on, I heard of a swarm in my next neighbour's garden

just over my hedge. That was at 3.45 p.m. I promptly made my arrangements, put a clean, new hive with eight brood combs and some syrup ready, took the swarm, a very large one, and had them all in by dinner-time, 7 p.m., and quiet. This morning, there are a lot on the ground and about very early (6.30), apparently from both hives. You see, I am gradually learning about bees, with the help of your book and journals, &c. There is no one to advise me here. Unfortunately, I cannot find out where the swarm I took yesterday came from? I am the only person who has any bees left within several miles of Cowes, as far as I know or can find out. All the others have given up, cleaned out by "Isle of Wight" disease. Did I do right in putting the swarm yesterday into a new hive, or ought I to have united them to the other colony? Has there been any good honey taken yet?—JUVENIS CANIS, Cowes, I.W.

REPLY.—You could have found which hive the swarm came from by taking a few of the bees in a cup, carrying them some little distance away, and after dusting with flour, allowing them to fly. They would return to the parent stock, and being white, could be seen readily. If you want surplus, it would have been best to return them to the parent stock; but for increase, you have done the right thing. Swarms often fly for miles, so it is just possible it may not have come from your hive. A number of good takes of honey have been reported.

[8765] *Various Queries.*—I have only just started bee-keeping, all my experience being acquired by watching and occasionally assisting a bee-keeping friend during the last two or three years. I have, however, recently read Mr. Cheshire's book on Practical Bee-Keeping (published a good many years ago), and there are one or two points on which I would like your advice, in shaping my future course, viz:—

(1) Was the "Non-swarming system," described in Mr. Cheshire's book, ever given a practical test, and is it practised to any extent to-day, and with what success?

(2) Both from what I have seen and read, the vast majority of frame hives have the frames running from back to front. Is there any fundamental principle involved in this, or can the frames run either way? If (as I understand at present) it is only a question of ventilation, would it be sufficient for all purposes, in a hive having frames running parallel to the entrance, to have the entrance the full width of the body-box, and say ⅛in. in depth, regulated, of course, by a sliding door?

(3) If entrances are varied in depth from the usual "bee space" (quarter of an inch), must the distance between the floor-board and the bottom bar of frames be varied accordingly?

(4) I have a single hive at present, which is apparently very strong, and is working well in a super of shallow frames. I proposed to leave them as they are this season. Shall I be doing right, or should I divide them? If so, when? I have no idea how old the queen is.

(5) If, in the future, I buy a virgin queen from a well-known bee-man (such as advertise in the "B.B.J."), can she be introduced directly as with a fertile queen, or must she be caged?

I may add that I have read with interest the "B.B.J." since I have possessed bees of my own, and find the correspondence, &c., very enlightening.—NOVICIATE, Essex.

REPLY.—(1) This system was tested and found unsatisfactory, and is not practised to-day. (2) It does not matter much which way the frames run. In the case of a W.B.C. hive you can place the brood chambers so that they are in either position, as you please. Entrances to all hives run the full width. You must make the entrance ⅜in. only, not ½in. or mice will be able to get in. (3) The size of depth of entrance does not affect the space between bottom bars and floor-board. (4) For the production of honey leave them as they are. (5) All queens whether fertile or virgin should be caged for introduction. We would advise you to buy The British Bee-Keepers' Guide Book, and read it first, before studying out-of-date works.

[8766] *A Dwindling Stock.*—I started bee-keeping with two driven stocks united last August, which are just beginning to draw out their first supers. I had previously been assisting an old bee-keeper in order to learn all I could, but, fortunately have had no disease to contend with. About three months ago I had another stock brought for me to look after. I found only four frames, the combs black with age, and in the other part the bees had built new comb up from the floor, filling up the vacant space not occupied by the frames. They were strong in numbers, but had very little food and brood in the frames. I put a feeder on with thin syrup, but the currants were all in bloom then, and they did not touch it. Then I cut out sufficient empty new comb and inserted new frames with wired foundation, intending to gradually cut out all the irregular combs, and get the frames in. The following week (I can only get to them at week ends), about the middle of May, I put on a super, as the fruit

was in bloom all round, and the bees seemed to be working pretty well, though they had only half drawn out the new frame.

The weather then prevented me looking at them for a week or two, till the 1st June, when I found a lot of bees clustered on the alighting board and few working in and out. Nothing had been done since last examination, and the bees seemed disinclined to fly. They had been up into the new super (I had replaced a super with starters of foundation, which had been left on all winter, with new sections and full sheets), and had soiled it with dirty yellow spots. Since then there seems to be less brood, very little unsealed honey, and the bees dying off. The alighting board is very much soiled, and the bees crawl about on the grass in front. I took the super off when I found they had stopped breeding, and covered down. Would it be safe to use that super in another hive, if this is "Isle of Wight" disease? I shall be very glad if you will tell me if it may be anything else, and if any of the material could be used again, or must everything be burnt?

How can I obtain the expert's certificate? Must I join the B.B.K.A. or the Hampshire B.K.A.?—P. E., Fareham, Hants.

REPLY.—There is little doubt from what you say that the bees are suffering from "Isle of Wight" disease. You should destroy the bees, then burn the combs and sections, and scorch both hive and super with a painter's blow-lamp, before using again. Particulars of examination and membership of B.B.K.A. have been sent you. No. The Hampshire Association is not affiliated to the B.B.K.A.

Bee Shows to Come.

July 17 and 18, at Lincoln.—Lincolnshire Agricultural Society's Show. Honey section, under the management of Lincs. Bee-keepers' Association. Prizes value £30. Open classes for Appliances, Observatory Hives, Extracted Honey, and Sections. Schedules from J. H. Hadfield, hon. sec., Alford, Lincs. **Entries closed.**

July 23 and 24, at Cardiff.—Glamorgan Bee-Keepers' Association, in connection with the Cardiff and County Horticultural Society's Show. Open classes for collection, sections, &c. Schedules from W. J. Wiltshire, Maindy School, Cardiff. **Entries close July 17th.**

July 23rd and 24th, at Wolverhampton.—Staffordshire Agricultural Society's Show. Bee and Honey section, under the direction of the Staffordshire Beekeepers' Association. Open classes for appliances, observatory hives, extracted honey, and sections. Schedules and entry forms from C. R. Forse, Hon. Sec., Trentham, Stoke-on-Trent. **Entries close July 5th.**

July 23, 24, and 25, at York.—Show of Hives, Honey, &c., in connection with the Yorkshire Agricultural Society's Show. Liberal prize list. Schedules and particulars from J. Maughan, secretary, Blake-street, York.

July 31st to August 4th, at Burnley.—Honey Show of the Royal Lancs. Agricultural Society. Eight open classes for Honey, &c. £30 in prizes. Schedules from Ed. Bohane, Derby House, Preston. **Entries close July 9th.**

August 6th, at Stoke Park, Guildford.—Annual Exhibition of Bees, Wax, Appliances, &c., will be held by the Surrey B.K.A., in connection with the Guildford and West Surrey Agricultural Association. Nineteen classes (five open to all). Many medals. Schedules from F. B. White, hon. secretary, Marden House, Redhill, Surrey. **Entries close July 26th.**

Aug. 7th, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Three open classes; one for single 1lb. jar of honey (entry free). Schedules from G. Richings, 2, Shrubbery-terrace, Worcester.—**Entries close Aug. 2nd.**

August 7th, at Bruton.—The Annual Show of the Somerset Bee-Keepers' Association, in connection with the Bruton Flower Show. Open classes. Schedules from Mr. R. Litman, South-street, Castle Cary, Somerset. **Entries close August 2nd.**

August 13th, at Wye, near Ashford.—Kent Honey Show, 12th Annual Exhibition. Classes to suit all bee-keepers. Splendid prizes; small entrance fees. One 6 guinea and two 5 guinea challenge cups; also a 2 guinea champion silver cup. A new class this year for six 1lb. of extracted honey, put up in short bottles, or other vessels, suitable for getting honey out of easily, and for sending honey away in. Open to United Kingdom. Two silver medals best exhibits of bee appliances. Twenty-five different classes to enter in. Staging and repairing carried out by experienced men. Prize schedule and entry form free on application to Mr. Alfred Lepper, secretary, Kent Honey Show, Scotton Street, Wye, Kent. Prize schedule and entry form will be sent to all exhibitors of last year without application.

September 3rd, at Lancaster.—Lancaster Agricultural Society. In conjunction with the Lancashire B.K.A. Classes for honey, bee produce. Specials, including two silver challenge cups, two silver and one bronze medals. Write for honey schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 27th.**

Sept. 24th and 25th, at Kendal.—The Annual Show of Honey, Wax, and Appliances of the Cumberland and Westmorland B.K.A., in connection with the Northern Counties Fruit Congress, in the Market Hall, Kendal. Eleven open classes. Liberal prizes. Note.—All prize-money will be paid on second day of show. Schedules from G. W. Avery, Wetheral, Carlisle, or Geo. Chatham, Low Green, Staveley, Kendal.

HOMES OF THE HONEY BEE.

APIARIES OF OUR READERS.

Mr. A. W. Grant, a successful Isle of Man bee-keeper, sends us a photo of his apiary, which is charmingly placed. In describing it he says:—"My apiary is situated at Corony Beg, Maughold, Isle of Man, about 400ft. above sea level. The rising ground at the back is North Barrule, one of the highest mountains in the island. I have been keeping bees for about ten years, and I find apiculture a grand study, likewise a remunerative hobby, and I consider I have been very successful with bees. My best 'take' was in 1911, when I secured an average of 76lb per hive. In 1912 I only took 45lb. per hive, but the season was very wet.

"The white tent shown in photo I made for manipulating purposes. There is

plenty of room inside for a hive, and I find it very useful when taking honey off, specially if robbers are about.

"I secured my third-class certificate at the Royal Show at Liverpool in 1910, and am very proud of it. The bees wintered very badly last year, and breeding stopped very early. Although all my stocks were headed with young queens, the result was they came through the winter very weak. I have united several, and am now waiting for the flow. Clover is coming out nicely, and there are hopes for the heather."

powdered naphthaline under the lugs of the frames.

E. L. P. (Hants).—*Queen-cell in Section-rack.*—The comb was smashed up through being badly packed, therefore we are unable to reply to your inquiry.

A Village Shoemaker.—*Old Foundation.*—What you imagine to be dirt is merely small pieces of wax, which the bees have put on the foundation when commencing to work it into cells. It will be quite all right for use.

MR. A. W. GRANT'S APIARY, CORONY BEG, MAUGHOLD, ISLE OF MAN.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

D. J. C. (Kings Lynn).—*Utilising Old Honey for Bee-food.*—The honey can be used for the bees in the autumn if it is well boiled. We should not advise you to use it as you suggest, as the flavour will be very inferior.

H. W. (Sheffield).—*Bees and Poultry.*—The bees are more likely to injure the poultry than the reverse. At certain times bees are irritable, and have been known to attack and sting chickens to death.

B. P. E. (Nottingham).—*Earwigs in Hives.*—To get rid of these, use

C. L. (Melton Mowbray).—*Broodless Stock.*—The queen has been injured, and was therefore incapable of laying. You did right to unite the swarm; there should be brood hatching out in the course of three weeks' time.

H. A. (Wakefield).—*Hinged Floor-board. —Wiring Frames.*—(1) Your design of a hinged floor-board is good, but not new. (2) Our idea is that it would take too long for the average bee-keeper to wire the frames as you suggest, although we can quite see the advantage of your method in other respects. (3) Sorry we cannot explain the cause of the bees' condition. (4) It would be impossible to do this, as the cost would be too great.

J. G. S. (Ewell).—*Lymnanthes Douglassi. —Removing Supers, &c.*—(1) It is difficult to say from what source the bees are gathering the orange-coloured pollen. It is evidently from some local flower, which has bloomed profusely. (2) Lymnanthes is not grown from seed every year. Leave the plants, and they will come up again. (3) If you buy the right kind of section-rack built out at the side as shown in "Guide Book" (page

56), you will have no difficulty with your supers. It completely covers the frames.

ROVA.—*Dead Queens.*—(1) It was a 1912 queen. (2) It was not at all singular for you to find a queen in each hive.

BEE-KEEPER (Wiltshire).—*Insurance.*—Particulars of the Insurance scheme can be had from the Secretary of the B.B.K.A., or if you send us your full name and address we will send these to you direct.

Suspected Disease.

NOVICE (Cambridge).—There is no disease in bees sent. It is evidently a case of robbing. We make no charge for replying to questions asked by readers, and we are only too willing to help them in this way.

T. C. (Watford).—We regret to say the bees are affected with "Isle of Wight" disease.

J. D. H. (Macduff).—The comb shows that the trouble is sour brood, not foul brood.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½*in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

1913 QUEENS, black, safe delivery, 4s. 6d.; virgins, 2s. 6d.—L. NORTON, Cleeve Hill, Cheltenham. v 19

HEALTHY 4½lb. swarm, 11s.; new Brice swarm catcher, 3s.; 8-framed travelling stock or swarm box, 3s.—WILSON, 30, Burry-road, St. Leonards. v 24

SPLENDID 1913 honey, 15s. per 28lb. tin; sample, 2d..—DUTTON, Terling, Essex. v 23

WANTED, 1lb. screw cap honey bottles.—APIARIST, 50, Freeman-street, Grimsby. v 21

EXCHANGE. 60-egg Tamlin incubator, splendid hatcher, for three swarms bees.—AVERY, Deverill, Warminster. v 25

1913 TESTED QUEENS, 4s.; virgins, 2s.; nuclei four and six frames, with brood and 1913 queens, 15s. and £1, guaranteed; prompt despatch, and healthy boxes, free.—R. WOOD, Spring Bank, Ripon. v 16

"BRITISH BEE JOURNALS," Vols. 31, 32, 33, 34; "Bee-Keepers' Record," Vols. 21, 22, 23, unbound, perfect conditon, offers, cash.—SALT, Sunnyside, Mickleover, Derby. v 15

PURE CAMBRIDGESHIRE HONEY, in 1lb. bottles, 8s. 6d. dozen, carriage forward, cash with order; sample, 2d.—A. E. WILLETT, Cheveley, Newmarket, Cambs. v 14

MICROSCOPE, student's, superior quality, first-class condition, sliding course, screw fine adjustment, substage diaphragm polarizer, objectives, Leach 1in, Johnson ⅔in, Beck ¼in, eyepieces, two sets, stand, condenser, &c., in mahogany wooden case, cost over £12, accept £6.10, or part payment, good camera, general work, or lecturer's lantern. Approval; Deposit.—FRANKENSTEIN, 1, St. James's-terrace, London, N.W. v 18

HEALTHY natural swarms, 12s., on rail.—CHAPMAN, Chelston Cottage, Bodmin, Cornwall. v 17

WANTED to purchase, any quantity new season's Scotch honey, sections and extracted; also 4cwt. finest English extracted.—GEO. W. PAISLEY, Wayside Apiary, Newport-on-Tay. v 20

HONEY EXTRACTOR, perfect, 12s. 6d.; ripener, new, 8s. 6d.; Brice's 1-frame observatory hive, as new, 18s.; all clean and healthy.—WHEATLEY, Spa Apiary, Hinckley. v 11

HIVES, Conqueror, nucleus, supers, combs, appliances, cheap; state requirements.—HULBERT, Hermitage, Worcester. v 75

FOUR strong stocks, in bar frame hives, several secondhand empty hives, and swarms, free from all diseases, cheap.—BRADSHAW, Allerston, Pickering. v 81

COMPLETE volumes of "Gleanings," unbound, for 1908, 1909 and 1912, price 3s. 6d. each, post free.—MANAGER, "B.B.J." Office, 23, Bedford-street, Strand, W.C.

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

CHOICE 1913 queens, 4s. 6d. each; or 4-frame nuclei, with 1913 queens, 12s. 6d. each, guaranteed healthy.—CROWE, Wigston Magna, Leicester.

50,000 ENTERPRISING BEE-MEN forward 3d. Samples unique cases, unequalled.—BOWEN, Coronation, Cheltenham. v 22

WANTED, new sections, glazed and unglazed, first quality, prompt cash.—CHILTON, Southdown Apiaries, Polegate, Sussex.

BETTER THAN SWARMS.—4-frame stocks, 15s.; 6-frame ditto, 21s., including 1913 fertile queens.—AVERY, Deverill, Warminster. v 8

SECTIONS WANTED, best quality, for cash.—SMITH and CO., 17, Cambridge-street, Hyde Park.

SNELGROVE'S 1913 fertile queens, 4s.; Snelgrove's "Re-queening," 6½d.—14, Albert Quadrant, Weston-super-Mare. v 57

SECTION GLAZING, extra fine quality, lace paper, neat pattern, white, 100 strips, 6d.; 300, 1s. 4d.; 500, 2s. 3d., post free; lace bands, 2⅜in., 3in. and 3⅝in. wide, 100, 1s. 2d.; 200, 2s. 3d.; 500, 4s., post free.—W. WOODLEY, Beedon, Newbury.

BRICE'S BRONZE MEDAL QUEENS (20th season). Special hybrids, 7s. 6d.; hybrids, 5s. 6d.; English blacks, 4s. 6d.; virgins, 2s. 6d.; safe delivery.—BRICE'S APIARIES, Green-street Green, Orpington, Kent.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held in the Hives and Honey Department, Royal Show Ground, Bristol, on Thursday, July 3rd, 1913. Mr. C. L. M. Eales presided. There were also present: Miss M. D. Sillar and J. N. Smallwood (Association representatives), Col. Jolly and L. Bigg-Withers (Somerset), F. Gravil (Glamorganshire), Rev. F. S. F. Jannings (Yorkshire), E. E. Scholefield (Devon), and the Secretary (W. Herrod).

Letters expressing regret at inability to attend were read from Messrs. T. W. Cowan, W. F. Reid, A. G. Pugh, G. S. Faunch, and D. Seamer.

The minutes of the Council meeting held June 19th, 1913, were read and confirmed.

The following new members were elected: Mrs. E. E. Harefield and S. Alnal Hasan Razarr.

The Croydon Association nominated Miss Hazel Inglis as their representative, and she was accepted.

The report of the Finance Committee was presented by Mr. Smallwood, who stated that the payments into the bank for June amounted to £39 8s. 1d., the bank balance being £219 9s. 2d., and that no cheques were required.

The report of a preliminary examination held at Barnet was presented, and passes were granted to W. D. Ridley, F. Ford, F. Hancock, H. D. C. Copps, and N. S. Toms.

Applications for preliminary examinations were granted to Northampton, Henwick, Crayford, Somerset, Hereford, and Norfolk.

Messrs. Gravil, Bigg-Wither, Scholefield, and Colonel Jolly stated that, in accordance with the wish of the Council of the B.B.K.A., they had approached the Members of Parliament in their respective counties to support the Bee Diseases Bill, and, without exception, the answers received had been favourable.

The Secretary stated that, according to instructions given at the last Council meeting, the circular letter drafted asking for support of the Bill had been sent to every M.P. Many replies had been received, every one promising support.

The Chairman, in a few happy words, expressed his pleasure in meeting the representative members of the Council from the West of England, and regretted that the distance from London prevented them meeting more often to mutually exchange ideas. He was pleased to say the representatives of the affiliated associations were gradually realising their obligations with regard to their duties of helping in the management of the British Bee-keepers' Association, and were attending the Council meetings in ever-increasing numbers, so that the Council was now a truly representative body.

Mr. Scholefield replied, stating how pleased he was to be present, and regretted that, as the Chairman remarked, the long journey to London prevented his more frequent attendance. He considered that every representative in the West of England should have attended the meeting held in their midst. He had another important engagement, but the moment he received notice of this meeting he cancelled it, so that he could be present.

The next meeting will be held on September 18th at 23, Bedford Street, Strand.

THE "ROYAL" SHOW AT BRISTOL.

An ideal place and glorious weather, the natural result being a highly successful show this year. Held on the hills above the old city of Bristol on Durdham Downs, where the turf is level and as velvet to the footstep, the organisers of the show must have had the minimum of labour, save that it must have caused many a weary tug of motor or of horse to drag the heavy loads up the big hills which lead to these plains above. Our interest, of course, centres where a bold advertisement tells us are to be found the "Hives and Honey." Other departments all seem crowded, but it seems that on this occasion we have a larger attendance of visitors interested in bee-keeping than usual, the inquiries are more numerous and intelligent; those who ask seemed to have previously acquainted themselves a little with our industry. Evidently we are progressing. The man in the street wants to know more of bees and how they get their honey. The exhibits seem quite up to the usual standard; perhaps the extracted honey was exceptionally fine. The judging was undertaken by Mr. T. W. Cowan, the Rev. H. G. Stanley, and Mr. C. L. M. Eales. Better qualified judges could scarcely have been selected, but we regret to say that Mr. W. F. Reid, who was originally appointed as one of them, was unable to be present, Miss Reid having to endure a serious operation. We sympathise with him, and wish his daughter a speedy recovery.

Two new features attracted attention, both from an educational point of view, the first being a complete collection of examples of the transition of the bee from the egg to the perfect insect: it included also the "furniture" of its home to wit, combs, old and new. Mr.

Geo. Steventon, of Bisley, Surrey, is the careful compiler of this object-lesson, which will be found of immense use to the lecturer and teacher of bee-keeping. The second was a collection of marvellous photographs by Mr. J. S. Baldry, of Lincoln, in natural colours, of subjects connected with bee-keeping, including flowers from which pollen and nectar are gathered, of the gatherers themselves, both *mellifica* and *bombus*, of the combs in which they store their garnering, and of the homes and store-houses. These photographs were artistically arranged, and well worthy of a place in the house of any bee-keeper. Our readers must see them. Another object of interest was a native hive from Carniolia, kindly brought and lent by the Rev. F. S. F. Jannings.

The lectures and demonstrations given each day in the bee-tent were exceedingly well attended. The many questions asked and answered, showed the interest aroused among the general public in the bees. Mr. L. Bigg-Wither undertook the duties of steward.

Below we append a list of awards:—

HIVES AND APPLIANCES.

Class 528.—*Collection of Hives and Appliances, including Suitable Outfit for a Beginner in Bee-keeping.*—1st, Jas. Lee and Son, George Street, Uxbridge; 2nd, W. P. Meadows, Syston, Leicester; 3rd, E. H. Taylor, Welwyn, Herts; r. and h.c. Brown and Sons, 31 Bridge Street, Bristol.

Class 529.—*Complete Frame-hive for General Use.*—1st, Jas. Lee and Son; 2nd, E. H. Taylor; 3rd, J. P. Curtis, High Street, Weston-super-Mare; h.c. and r.n., Brown and Sons.

Class 530.—*Complete Frame-hive for Cottager's Use, price not to exceed* 10*s.* 6*d.*—1st, E. H. Taylor; 2nd, Jas. Lee and Son; 3rd, W. P. Meadows.

Class 531.—*Honey-extractor.*—1st, W. P. Meadows; 2nd, Brown and Sons; certificate, E. H. Taylor.

Class 532.—*Observatory-hive with Bees and Queen.*—2nd, Brown and Sons.

Class 533.—*Any appliance connected with Bee-keeping.*—No award.

HONEY.

Classes 534 to 536 confined to members of the Somerset Bee-keepers' Association.

Class 534.—*Four* 1-*lb Sections.*—1st, G. W. Kirby, Priory Road, Knowle, Bristol; 2nd, J. Spiller, St. George's Terrace, Taunton; certificate, H. Kingston, Whitechurch, Bristol.

Class 535.—*Four* 1-*lb. Jars of Extracted Light-coloured Honey.*—1st, F. G. Hales, Wellow, Bath; 2nd, G. W. Kirby; certificate, H. Kingston.

Class 536.—*Collective Exhibit of Honey in Sections, Extracted Honey, and Beeswax.*—1st, G. W. Kirby; 2nd, H. Kingston.

Entries in Classes 537 to 540 can only be made by residents in Cheshire, Cumberland, Derbyshire, Durham, Herefordshire, Lancashire, Leicestershire, Lincolnshire, Monmouthshire, Rutland, Shropshire, Staffordshire, Warwickshire, Westmorland, Worcestershire, Yorkshire, the Isle of Man, Ireland, Scotland, or Wales.

Class 537.—*Twelve* 1-*lb Sections.*—1st, J. Pearman, Penny Long Lane, Derby; 2nd, J. G. Nicholson, Langwathby, Cumberland; 3rd, H. W. Taylor, Earls Croome, Worcester; r. and h.c., T. A. Dennison, The Laurels, Stockton, Rugby.

Class 538.—*Twelve* 1-*lb. Jars of Extracted Light-coloured Honey.*—1st, J. Pearman; 2nd, D. H. Burgess, Elworth, Sandbach, Cheshire; 3rd, Studley Horticultural College, Warwickshire; r. and h.c., W. Shuker, Middleton, Scriven, Bridgnorth.

Class 539.—*Twelve* 1-*lb. Jars of Extracted Medium- or Dark-coloured Honey.*—1st, J. Pearman; 2nd, W. B. Allister, Throckenholt, Wisbech; 3rd, J. Berry, Llanrwst, North Wales; r., and h.c., W. H. Allard, Poors Plot Farm, Stockton, Rugby.

Class 540.—*Twelve* 1-*lb. Jars of Granulated Honey.*—1st, J. Woods, Nettleworth Manor, Mansfield, Notts; 2nd, J. Pearman; 3rd, T. Marshall, Ivy Cottage, Sutton-on-Trent, Newark; r.n. and h.c., D. H. Burgess.

Entries in Classes 541 to 544 can only be made by residents in Bedfordshire, Berkshire, Bucks, Cambridgeshire, Cornwall, Devon, Dorset, Essex, Gloucestershire, Hampshire, Herts, Hunts, Isle of Wight, Kent, Middlesex, Norfolk, Northamptonshire, Oxfordshire, Somerset, Suffolk, Surrey, Sussex, or Wiltshire.

Class 541.—*Twelve* 1-*lb. Sections.*—1st, R. Brown and Son, Somersham, Hunts; 2nd, A. Young, East Street, Chatham; 3rd, Miss M. Barnardiston, The Ryes, Sudbury, Suffolk; r. and h.c., A. D. Boulden, Boughton Monchelsea.

Class 542.—*Twelve* 1-*lb. Jars of Extracted Light-coloured Honey.*—1st, S. G. S. Leigh, The Nurseries, Boughton, Hants; 2nd, A. H. Bowen, Coronation Road, Cheltenham; 3rd, G. W. Kirby; r.n. and h.c., R. Brown and Son.

Class 543.—*Twelve* 1-*lb. Jars of Extracted Medium- or Dark-coloured Honey.*—1st, C. E. Billson, Cranford, Kettering; 2nd, A. McCullah, Webberton, Dunchideock, Exeter; 3rd, A. C. L. Fell, Longwall, Walton-on-Thames; r. and h.c., G. W. Kirby.

Class 544.—*Twelve* 1-*lb. Jars of Granulated Honey.*—1st, W. Tucker, Jump, Highbickington, Devon; 2nd, R. Holborow,

Long Street, Tetbury, Glos.; 3rd, R. Brown and Son.

MISCELLANEOUS OPEN CLASSES.

Class 545.—*Three Shallow-frames of Comb Honey for Extracting.*—1st, F. G. Hales; 2nd, H. W. Taylor; 3rd, A. D. Boulden; r. and h.c., R. Brown and Son.

Class 546.—*Six* 1-*lb. Jars of Heather Honey.*—1st, W. Dixon, 27, Central Road, Kirkgate, Leeds; 2nd, J. Berry; 3rd, M. Lamboll, Chiddingford, Surrey; r. and h.c., J. Pearman.

Class 547.—*Six Jars of Heather-mixture Extracted Honey.*—1st, M. Lamboll; 2nd, C. E. Smith, Grayfield Place, Sutton-in-Ashfield; 3rd, J. Berry; r.n. and h.c., W. Dixon.

Class 548.—*Honey Trophy.*—1st, J. Pearman; 2nd, R. Brown and Son.

Class 549.—*Beeswax (not less than* 2-*lb.).*—1st, J. Pearman; 2nd, G. W. Kirby; 3rd, R. Brown and Son; r. and h.c., W. Tucker.

Class 550.—*Beeswax (not less than* 3-*lb. in Shape, Quality and Package suitable for the Retail Trade).*—1st, J. Pearman; 2nd, J. Berry; 3rd, T. A. Dennison; r. and h.c., G. W. Kirby.

Class 551.—*Honey Vinegar* (1 *quart*).—1st, G. W. Kirby; 2nd, R. Brown and Son; certificate Mrs. W. Herrod, Old Bedford Road, Luton.

Class 552.—*Mead* (1 *quart*).—1st, Mrs. W. Herrod; 2nd, A. McCullah; certificate, G. H. Barnes, 1, Shepherds Lane, Dartford.

Class 553.—*Exhibit of a Practical or Interesting Nature Connected with Bee-culture.*—No entry.

Class 554.—*Exhibit of a Scientific Nature.*—1st, J. S. Baldry, Clasgetgate, Lincoln; certificate, G. S. Steventon, Bisley, Surrey.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

ARTIFICIAL SWARMS.

One of the advantages of the modern

FIG. 1.

frame hive is that the bee-keeper has full control over increase. He can carry this out to his heart's desire, or he can practically prevent it altogether. The value of this is understood when we consider the time which used to be wasted by our forebears in watching for swarms as soon as the hives showed that the bees were reaching that stage, first by hanging in a cluster at the entrance in the evening, and a little later continuing to do so throughout the day on account of the overcrowded condition of the hive. Then, again, there was always the danger of losing the swarm by its absconding, or by the bees going into inaccessible places, such as the hollow of a tree, under the leads in a church roof, or clustering at the top of a very high tree.

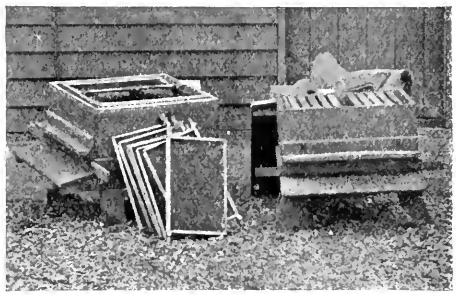


FIG. 2.

In making an artificial swarm the bee-keeper must keep in mind two things: (1) That a natural swarm consists of the old queen and the old bees, (2) that bees locate position and not the hive. The latter can soon be proved by moving a stock about a couple of yards on a day when the bees are flying. It will be seen that they return to and hover round the position which the hive occupied.

If it is desired to make an artificial swarm, preparation should be made early in the season by stimulating the bees either by feeding slowly when the combs contain very little food, or when there is an

FIG. 3.

abundance of food, by bruising the cappings covering the honey round the brood

nest. About the latter end of May the hive should be crammed full of bees, so that upon a fine, warm day, when the bees are flying freely, the swarm can be made. The best time for the purpose is about twelve o'clock. Bring the new hive with its full complement of ten frames, fitted with sheets of wired foundation, and stand it at the side of the stock, (Fig. 1); remove the fitted frames, and rear them at the side of the hive. Now examine carefully each comb in the stock until the queen is found, then place that comb in the centre of the new hive (Fig. 2) and fill up with the fitted frames. Close up the combs in the stock and insert a frame fitted with foundation

FIG. 4.

at the outside of the brood nest to replace the comb removed, as shown in Fig. 3. Wrap both down warmly with quilts and put the new hive in the position occupied originally by the stock (Fig. 4). (This will be understood by looking again at Fig. 1, where the original stock is shown with a cap on the roof, and then at Fig. 4, where the new hive is shown without a cap.) The bees fly out from the parent stock to

FIG. 5.

forage, and return to the new hive on the old stand, so that we get artificially what we should have if the stock had swarmed naturally, *i.e.*, the old queen and the old bees forming the swarm.

It will be advisable to feed the swarm for about a week, and at the end of the second or third day, the bees should be closed on to the number of combs they are covering, and the other frames given as the ones they occupy are completed.

Artificial swarms can also be made from skeps by driving and finding the queen which, if desired for selling, is put into a swarm box, which is placed on the old stand (Fig. 6), or into a skep (Fig. 5); the flying bees will collect to where the queen is, although there is no comb in either skep or box. Care must be taken to make the box dark by covering it with a sack, or the bees will not enter. At night the stone which is used to wedge open the lid

FIG. 6.

(placed at the bottom) is removed, the lid screwed down fast, and the bees are then ready to travel. In the case of the skep the bees are tied in by means of cheese cloth. A swarm can also be made from a skep into a frame hive in the same way, although the usual practice is to transfer the bees by placing the skep over the frames and allowing them to work down.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

"ISLE OF WIGHT" DISEASE.

[8755] Referring to Mr. Crawshaw's two queries (p. 266)—(a) There is no doubt that the disease is carried by swarms and driven bees. I do not think all bees sent to the North of Scotland would arrive with honey sacs empty, especially diseased bees which might consume their store much more slowly than the normal bees. (b) The disease would probably travel from the Isle of Wight to the mainland in section honey.

My experience of the disease is limited to districts where the bee-keepers are scattered, the distance between apiaries varying from a hundred yards to a mile, and in a few cases I know of the hives are quite two miles from any other hives. In the case of the latter the bees appear to have security from "I. of W." until the hives are sent to the moors for the heather harvest, when, coming in closer contact with others, they get the disease by robbing diseased hives. If Mr. Lee's apiary is four miles from the nearest bees, his immunity is of little value as evidence of the efficacy of antiseptics.

As regards Mr. Wigley's experiments, and Mr. Mace's letter (page 265), what proof have we that any antiseptic treatment of hives and their surroundings has had any effect? Is it not more probable that the five stocks wintered in safety solely because of the deprivation of their contaminated stores, as all hives in the experiment appear to have had antiseptic treatment.

In the case of swarms and driven bees from infected areas, I should advise a few days' detention in an empty box with starters only, and after transferring the bees into a hive the box and contents should be promptly burned.—J. N. Kidd, Stocksfield.

"KENTISH" CURE FOR "I.O.W." DISEASE.

[8756] I write as a novice, only giving my views as humble suggestions to the experts, and as correspondence on this subject must be interesting to all bee-keepers.

Firstly, what does the Board of Agriculture's leaflet No. 253 say as to the cause of this disease? It is due to a *microscopic animal parasite* in the *walls of chyle stomach and intestine* of bee, which therefore, as in human beings, I submit would cause local trouble and general trouble by absorption into the system of (probably) toxins. That being admitted, I would suggest our line of treatment should be:—

(*a*) *Prevention.*—On the same principle that one works for the good of the public health, great cleanliness in everything connected with one's bees. Hives which can be kept clean as with a W.B.C. hive, stocks easily transferred, examined and controlled. Skeps made illegal, as being, in my opinion, hotbeds of disease as ordinarily used.

(*b*) *Cure Treatment.*—Does not quinine have a wonderful effect on malaria, a parasitic disease, therefore, by being fed to bees, as Mr. Wigley suggests, I submit it seems reasonable to believe it may have some effect.

(*c*) *Aseptic.*—This, again, should help for a cure, and Mr. Mace's idea seems common sense, viz., *clean hives, clean frames, with fresh foundation*, &c.

(*d*) *Antiseptic.*—To my mind, it makes no difference what the antiseptic is, whether Izal, Lysol, carbolic acid, &c., Ayles Cure, so long as it is strong enough, when painted on the interior of hive, to kill all local parasites, without fear of bees taking a poisonous dose, and at the same time, when the hive gets to a certain temperature, giving off fumes which bees inhale, circulate in their system, and so attack the parasite through the blood.

I hesitate to write these lines, but think discussion is good for us all, especially concerning this bug-bear of bee-keepers, "I.O.W." disease, and these are some points which have occurred to me as a novice in bee-keeping and a medical man, which probably many will say there is no need for me to tell them, or I should not write such theoretical stuff.

Thanking you in anticipation, and for the many useful hints which I obtain from the "B.B.J."—Thomas Compton, M.R.C.S.

QUININE FOR "ISLE OF WIGHT" DISEASE.

[8757] *Re* quinine sulphate cure for "Isle of Wight" disease. The amount of sulphuric acid required to dissolve quinine sulphate varies with different samples of the sulphate.

In my experience it requires at least 7 to 10 drops of acid to dissolve 60 grains. If, however, quinine hydrochloride is used 60 grains can be dissolved in 5 ozs. of water without the aid of acid, forming a neutral solution. The bulk of water is increased, but such a defect is trifling compared to the injury that bees may sustain owing to the presence of excess of acid.—J. W. Brewer, Bath.

NOTES FROM AN IRISH READER.

[8758] Some bees that were ready to hatch from the cells (about a dozen) in my observation hive, were found dead; the brood is otherwise perfectly healthy and normal, and the workers have opened up the cells that were partially eaten away by the young deceased bees, and have removed the carcases. Can you explain this incident? I notice in my observation hive that the pollen gatherers are particular as to the cells in which they deposit their loads. They do not take the first cell containing pollen that they may come across, but pass over many until they come to the one that contains, what I suppose to be, similar pollen to that carried by them.

Has it ever been suggested that "Isle of Wight" disease might be traceable to

that parasite (*Braula Cœca*), that affects the bodies of bees? This is only a supposition on my part, but might be worth looking into. I am writing this in my bee-house, as I am expecting some swarms. The weather now is delightful, and the bees are revelling in the clover harvest. Unfortunately this district has been devastated by foul brood, and I have had to destroy some ten stocks. I might have cured them, but took the shortest road and destroyed them entirely, disinfecting the hives and fitting all new foundation.

How some of you London people must envy us in the country, but the envy may be on your side; it is certain I do not envy you in London. May you have a successful season and plenty of honey!—APIS, Co. Cork.

[We should say the brood has either been chilled or injured in some way. Most probably the former. We do not think *Braula Cœca* is likely to be responsible for "Isle of Wight" disease. We reciprocate your good wishes most heartily.—EDS.]

BEE NOTES FROM CHESTERFIELD.

[8759] It may interest some to hear that in this part of Derbyshire we have had ideal bee-weather, and the bees are doing well; honey is coming in fast, and stocks are very strong. At the time of writing, however, there is a change to wet, and the air is much cooler. Two of my stocks seemed likely to swarm, but I managed to put off the event, and since the change of weather I see they have destroyed the queen cells and thrown out the drones: so I suppose that matter is settled for this season. I am glad to say my bees are very gentle, and rarely resent my interference with their domestic affairs, and it is a pleasure to handle them. I attribute this in a great measure to my frequently moving about amongst the hives. I have one stock in an orchard about a mile from here, which is left much more to itself, and the bees are very difficult to handle and will follow me for some distance from the hive in order to have their revenge. I am glad to say that in all the fifteen years I have been a bee-keeper I have never yet had a case of disease amongst my bees (I fancy some of your readers ejaculating "lucky beggar").

I went to Sheffield on Tuesday (July 5), to hear Mr. J. C. Bee Mason, who was lecturing at the Cinema House, and I must say that it is an intellectual treat that no bee-keeper should miss. It may seem strange to some of your readers that during fifteen years of bee-keeping I have never yet witnessed a manipulation of live bees (except, of course, what I have carried out in my own apiary); but the fact is, we are not over-crowded with bee-keepers in Chesterfield, and so far as I know there has never been a demonstration of the kind here, so you may easily understand how great a pleasure and what an education it was to me, to hear Mr. Bee Mason and to see his wonderful pictures, exhibiting as they do marvellous tact and a steady persistence in the work in hand.

I learned more of the wonders of bee-life during that brief time than in all the previous fifteen years, and I gratefully acknowledge my indebtedness to Mr. Bee Mason for putting such a display before the public.

After the lecture, Mr. Bee Mason was kind enough to give me about fifteen minutes' chat, and I found him to be—just what every bee-keeper would like to find—affability and kindness itself.—THOS. E. EVANS.

BEE-KEEPING NEAR GLASGOW.

[8760] I read a letter in the JOURNAL of June 12th, from a correspondent in Lanarkshire. As I am thinking of taking up bee-keeping I shall be pleased if you could tell me of anyone in this district who might be willing to give me hints on the subject or let me have a look over his apiary. Perhaps the above mentioned writer might be willing to grant me this privilege?—G. B., Bridgeton.

[If any Scottish reader in the neighbourhood is willing to assist our correspondent, we shall be pleased to give his address.]

Queries and Replies.

[8767] *How to Ventilate Hives.*—The question of ventilation has been exercising my mind to a considerable extent of late, and as I am still in doubt about this very vital point I shall be glad of your assistance in the matter.

It is generally accepted that proper ventilation plays a very important part in the controlling of swarming and the general health of the hive, yet how few appear to fully appreciate this important factor! I venture to say that not one in a hundred bee-keepers provides any other form of airing the hive except by opening entrances to various extents, and the bees are left to do the rest themselves, be the weather one extreme or the other.

Of course, I know that there is the practice of raising the brood chamber on blocks and also setting the roof crossways in very hot weather—*when* we are favoured in this direction. But to the man who has to leave his bees from early morning until evening, and also those who have out apiaries, this is far from practical, to say nothing of the unnecessary jarring of the

bees and the danger of inducing robbing between and after the honey flows.

Also one of the most important points for successfully dealing with this terrible scourge of "Isle of Wight" disease is proper ventilation. I am wondering how this much-desired result can be effectually brought about. Whatever form this takes it must be suitable for all times of the year, and a safeguard when robbing is prevalent.

Where should this ventilator be placed? (1) In the floor or in the dummy? (2) What size should it be? (3) If in the floor should it be directly under brood nest or at the back of hive? I am presuming, of course, that the ventilator is made by fixing a piece of perforated zinc over the opening.—B. C. WADE, Norfolk.

REPLY.—(1) We do not advocate floor ventilation, as the perforated zinc gets choked with the debris from the hive, and is also often propolised up by the bees. In our remarks *re* Mr. Wigley's apiary, we mentioned his method of ventilation from the back of and under the brood chamber by raising it up and putting an eke underneath. Perhaps he will favour us with a drawing, which we should be pleased to publish. We do not see how you can get ventilation through the division board.

[8768] *Swarm Issuing before Queen Cells are Sealed.*—In your wide experience of bees no doubt you have come across many things which seem unaccountable to the novice. I should be obliged for your opinion of the following: A neighbour who has one hive of bees asked me to hive a very large swarm from it. As he did not want to increase we put the swarm back, but on looking for queen-cells on the old comb we could not find any with larvæ more than 24 hours old. Is it not unusual for bees to swarm before the queen-cells are sealed over? The bees were in a W.B.C. hive with the entrance open full, with a rack of empty sections on top which they had not started, therefore it was not a case of lack of ventilation or want of room.—HEMYOCK, Devon.

REPLY.—Bees will at times during very hot weather swarm when queen cells are not even started, so your experience is not very unusual.

[8769] *Driving Bees from a Barrel.*—I shall be obliged if you will answer the following question in the "B.B.J."

I propose driving two lots of bees now established in barrels. They are this season's swarms. The combs do not reach the mouth of the barrel by about a couple of feet. If I place a skep or other receptacle over the mouth in the ordinary way, will the bees walk up all this distance, or should a hole be cut in the barrel close to the combs for the bees to pass through, and something placed over it to receive them?—L.L., Essex.

REPLY.—Your only safe plan will be to work on a cool evening. Cut out the combs one by one and brush the bees off into a skep. Our experience is that bees will not run such a long distance, neither would they go out at a hole in the top.

[8770] *Re-combing stocks in Frame Hives.*—I should like your advice on the following problem. A neighbour has two stocks of bees in frame hives, which have been working exceedingly well lately, one having already yielded twenty-one well-filled sections. As increase was wanted, it was thought desirable to divide the two stocks to make three, in the manner described in the "Guide Book." On uncovering the first hive to obtain the frames of brood and eggs, I found it in a very confused and untidy state, there being only eight frames in the body-box, very irregularly spaced and not at all parallel, a large space in the centre not occupied by frames being filled with combs braced together and to the frames at the side, in such a manner as to make it impossible to remove any frame without damaging the comb in that and the adjacent frames, and breaking down hopelessly the frameless combs. The other hive was in a similar state. The explanation seems to be that the original swarms (two years ago) had been hived by throwing them into the body-box, the frames of foundation which were removed for the purpose never having been replaced. Under these circumstances it was, of course, impossible to make the increase in the manner intended, and the idea had to be abandoned. It is quite impossible to manipulate the hives, and in my opinion the only thing to do, is to re-comb both stocks by driving into new hives fitted up with the full number of frames of foundation, in order to get proper combs capable of manipulation.

I shall be obliged if you will say whether I am right, how the operation can be performed, and when is the best time, so as not to interfere unduly with the bees during the time they are supered.—L. J. W., Doncaster.

REPLY.—The hives must be left as they are until next spring. Then, as early as possible, cut out all the combs not occupied with food or brood, loosen the rest and pull the mass to the back of the hive, filling the empty space with frames, fitted with full sheets of foundation. As the brood hatches out from the combs nearest the back, cut them out, and put in other fitted frames, repeating until all are got rid of.

[8771] *Dealing with Swarms.—Effect of Bee-stings.*—On the 3rd inst. I hived a swarm of bees, which had settled in a neighbour's garden. On hiving them, to

my great surprise I found that they had worked a piece of comb some 10in. long by 4—5in. wide. On examining the stock this morning, I found one of the combs had collapsed (I expect it was due to careless wiring), so I removed it and found hundreds of eggs in it. (1) Can you explain the reason for the bees building the comb (I had a swarm from the same hive two days previous to this one), are they likely to be some other person's bees? (2) Can I put the comb which had the eggs in, back into the hive with safety, or will it need to be disinfected? A stock I hived on the 1st inst. seems to be working best of all, but when I examined it yesterday I could not find any eggs. I feel confident that there is a queen there by the way the bees are working. (3) Would the swarm have gone away if the queen was not there? (4) Did I look too soon? (5) I have kept bees for three years now, but still get stung. The stings do not hurt, but cause considerable swelling. Can you explain the reason of the swelling? and (6) How to prevent it?—R. T., Brooklands.

Reply.—(1) The bees in a swarm come out ready for comb-building, hence their action. It was a "cast" or second swarm from your own stock. (2) No, do not put it back. (3) No. (4) No. (5) You are not yet immune to the bee-poison. As soon as you become so, you will not be affected in this way. (6) Put on a hot compress as soon after being stung as possible.

[8772] *Using Apicure.*—I have been treating with Apicure six stocks badly affected with foul brood, and I am pleased to say they are practically cured. I should like to know: is it wise to take out affected combs as soon as possible after brood has hatched out, or will Apicure kill the germs when they leave the spore stage?—Jas. North, Expert.

Reply.—With the Apicure treatment there is no need to remove the combs, as the remedy will kill the bacilli as they become active.

[8773] *Working for Surplus.*—One of my hives swarmed ten days ago. As I am working for surplus, I destroyed all queen-cells and returned the swarm. The bees settled all right, but did not seem comfortable, the super which had been on since the last week in May, being very crowded: in fact, they seemed to me too crowded to work. Is this possible? Yesterday they seemed so unsettled that I decided to give them another super to relieve the overcrowding, though very little honey in the first super is capped. Did I act correctly or ought I to have waited until most of the first combs were capped? Having swarmed, and seeing that they have now plenty of room, is it likely they will swarm again? Would a second swarming fever be usual?—H. T.

Reply.—(1) You have done quite right. When the first super is about two-thirds full it should be raised and a second one placed underneath. You could also give ventilation by raising the brood-chamber an inch all round. (2) It is not likely that the bees will swarm again.

[8774] *Infuriated Bees.*—Can you give me any explanation why a hive of my bees should be so infuriated last Saturday? On the previous day, from this hive I removed a rack of shallow-frames, extracted the honey, and returned the former in the evening. I took no notice of the bees on Saturday morning, they were working as usual. About 11 o'clock I put a brood of chickens in a coop not far from the hives, in a place where I have put chickens for the last three years. About five minutes afterwards the bees began to attack the hen and chickens and also another brood that was near. My wife tried to move the coop, and after a second attempt had to give it up, as the bees attacked her, following her into the house, and we had to keep the house shut up for four hours, and even then it was hardly safe for anyone to be outside. I had washed the coop with lime and paraffin. Would the smell of the oil be the cause of the irritation? If the oil was the cause of the trouble, why should one hive only be so infuriated as there are five others standing in that part of my garden? Can I get any compensation from the insurance for the loss of my chickens?—F. H. D., Chelmsford.

Reply.—(1) The removal of the super, and climatic conditions, *i.e.*, thunder in the air, probably caused robbing of this particular stock. Also the smell of the oil and the movement of the chickens would attract the notice of the bees. (2) You cannot recover for loss of your own stock. It is only third party risks which are covered by the insurance.

Bee Shows to Come.

July 17 and 18, at Lincoln.—Lincolnshire Agricultural Society's Show. Honey section, under the management of Lincs. Bee-keepers' Association. Prizes value £30. Open classes for Appliances, Observatory Hives, Extracted Honey, and Sections. Schedules from J. H. Hadfield, hon. sec., Alford, Lincs. **Entries closed.**

July 23 and 24, at Cardiff.—Glamorgan Bee-Keepers' Association, in connection with the Cardiff and County Horticultural Society's Show. Open classes for collection, sections, &c. Schedules from W. J. Wiltshire, Maindy School, Cardiff. **Entries close July 17th.**

July 23rd and 24th, at Wolverhampton.—Staffordshire Agricultural Society's Show. Bee and Honey section, under the direction of the Staffordshire Beekeepers' Association. Open classes for appliances, observatory hives, extracted honey, and sections. Schedules and entry forms from C. R. Forse, Hon. Sec., Trentham, Stoke-on-Trent. **Entries closed.**

July 23, 24, and 25, at York.—Show of Hives, Honey, &c., in connection with the Yorkshire Agricultural Society's Show. Liberal prize list. Schedules and particulars from J. Maughan, secretary, Blake-street, York.

July 31st to August 4th, at Burnley.—Honey Show of the Royal Lancs. Agricultural Society. Eight open classes for Honey, &c. £30 in prizes. **Entries closed.**

August 6th, at Stoke Park, Guildford.—Annual Exhibition of Bees, Wax, Appliances, &c., will be held by the Surrey B.K.A., in connection with the Guildford and West Surrey Agricultural Association. Nineteen classes (five open to all). Many medals. Schedules from F. B. White, hon. secretary, Marden House, Redhill, Surrey. **Entries close July 26th.**

Aug. 7th, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Three open classes; one for single 1lb. jar of honey (entry free). Schedules from G. Richings, 2, Shrubbery-terrace, Worcester.—**Entries close Aug. 2nd.**

August 7th, at Bruton.—The Annual Show of the Somerset Bee-Keepers' Association, in connection with the Bruton Flower Show. Open classes. Schedules from Mr. R. Litman, South-street, Castle Cary, Somerset. **Entries close August 2nd.**

August 13th, at Wye, near Ashford.—Kent Honey Show, 12th Annual Exhibition. Classes to suit all bee-keepers. Splendid prizes; small entrance fees. One 6 guinea and two 5 guinea challenge cups; also a 2 guinea champion silver cup. A new class this year for six 1lb. of extracted honey, put up in short bottles, or other vessels, suitable for getting honey out of easily, and for sending honey away in. Open to United Kingdom. Two silver medals best exhibits of bee appliances. Twenty-five different classes to enter in. Staging and repairing carried out by experienced men. Prize schedule and entry form free on application to Mr. Alfred Lepper, secretary, Kent Honey Show, Scotton Street, Wye, Kent. Prize schedule and entry form will be sent to all exhibitors of last year without application.

August 19th and 20th, at The Dome, Brighton.—Annual Show of the Sussex Bee-keepers' Association, held in connection with the Brighton, Hove, and Sussex Horticultural Society's Summer Show. Six open classes for honey, including single bottle and section. Schedules from C. A. Overton, Hon. Sec., Beecroft, Crawley, Sussex.—**Entries close August 11th.**

September 3rd, at Lancaster.—Lancaster Agricultural Society. In conjunction with the Lancashire B.K.A. Classes for honey, bee produce. Specials, including two silver challenge cups, two silver and one bronze medals. Write for honey schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 27th.**

Sept. 24th and 25th, at Kendal.—The Annual Show of Honey, Wax, and Appliances of the Cumberland and Westmorland B.K.A., in connection with the Northern Counties Fruit Congress, in the Market Hall, Kendal. Eleven open classes. Liberal prizes. Note.—All prize-money will be paid on second day of show. Schedules from G. W. Avery, Wetheral, Carlisle, or Geo. Chatham, Low Green, Staveley, Kendal.

Notices to Correspondents.

G. R. B. (Ipswich).—*Re-queening with British Goldens.*—(1) We do not know how you are going to obtain British Golden queens, as Mr. Sladen has gone abroad, and his apiary, we believe, is dispersed. (2) We doubt the ultimate success of your scheme. In any case, you should not cover the entrances with excluder zinc, as suggested, or it will hinder the bees in their work. You might get your bee-keeper friends to close-space all their frames, and so prevent drones issuing. It is, however, too late to carry out your plan this year.

H. E. H. (Millom).—*Weak Stock Building Queen-cells.*—(1) For some reason or other the bees were preparing to supersede their queen. (2) This is not unusual. (3) No. It would be a "scrub" Golden queen.

J. E. (Pencader).—If you continue to use the Apicure all will be well. When the shallow combs are extracted you should fumigate with formaldehyde, which can be had with full instructions from this office. We thank you for your kind appreciation of the JOURNAL.

L. W. J. DEUSS (Nyasaland).—*Bees Refusing to Work for a Period.*—It is difficult for us to say why your bees "turned lazy" as you describe. Probably it was due to lack of ventilation, or to the flowers not secreting nectar for a time.

J. S. (Yorks).—*How Bees Contracted Disease.*—Most probably there are unknown to yourself diseased stocks near, which your bees have robbed, and so have brought disease into their own hives.

PERPLEXED (Chingford).—*Dark Honey.*—It is not through any fault of your management that your honey is not good. It is spoilt by honey-dew, and will not do for feeding back to the bees. Unsealed honey is unripe, and will ferment if extracted and kept.

J. C. (Blackheath).—*"Isle of Wight" Disease and Disinfection.*—It is difficult to say how soon this disease will develop. Unless the hive was thoroughly disinfected it was unwise to put bees in it, if you knew that the previous occupants were diseased.

H. W. K. (Strathpeffer).—*Swarm Invading an Occupied Hive.*—The fighting was caused by the bees trying to enter the Carniolan hive. Bees do this sometimes, we cannot explain why.

FRENCS (Isle of Man).—*Abnormal Brood.*—The brood is that of either a very old queen or a laying worker. We should say most probably the latter.

W. J. S. (Colchester).—*Queenless Hive.*—Do as you suggest. If there is no queen, the bees will commence to build queen-cells.

ANGLIAN (N. Valley).—*Formaldehyde for Foul Brood.*—(1) Add 3 parts of water to 1 part formaldehyde. This will make a 10oz. solution. Put 1½oz. of this every week on to a piece of flannel or a sponge, and place it at the back of the division-board. A supply of napthaline should always be kept in the hive. (2) We cannot say.

J. WILKIE (Fife).—*Queen-mating.*—(1) There is, of course, a chance of the queens meeting other drones, but the chances are in favour of their mating at home. (2) You might introduce fresh blood in this way, but you must exercise care in your purchase.

H. Beach-Thomas.—*Willow Herb and Sainfoin as Honey Plants.*—Willow herb yields an abundance of excellent white honey of good flavour. The plant blooms continuously for several months. Sainfoin is a perennial, but only of a few years' duration.

Honey Samples.

J. C. (Plymouth).—It is a good sample of clover honey, and quite fit to show in the light honey class.

E. G. T. (Harrow).—Your honey is from hawthorne and fruit blossom. There is no trace of honey dew in it.

N. A. H. (Canterbury).—A very good honey; colour, density, aroma, and flavour are excellent. From white clover principally.

Suspected Disease.

M. (Harborne).—There are signs of "Isle of Wight" disease in bees sent. If they do not improve in the course of a few days you should destroy the stock.

E. S. (Penge), A. P. (Llandaff), and B. M. (Essex).—Bees are affected with "Isle of Wight" disease. The only safe course to follow is to destroy them.

Anxious (Chelmsford), W. A. D. (Chigwell), and J. C. (Blackheath).—The bees are affected with "Isle of Wight" disease, and should be destroyed without delay.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½*in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

WANTED to purchase, secondhand Root-German wax extractor; send particulars.—HILLMAN, Stonehouse, Glos.

W.B.C. HIVE, two new section racks, smoker Guide, veil, sections, excluder, 18s., healthy.—SILLS, Chartridge, Chesham. v 26

4 STOCKS BEES, in box hives, 1913 queens, healthy, overstocked, 25s.—SELBY, Cemetery-road, Hitchin. v 44

HEAVY NATURAL SWARMS, May, in straw skeps, £1, on rail.—BEDS, "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 29

FINE CLOVER HONEY, sections, 9s.; 1lb. bottles, 10s. dozen, carefully packed, f.o.r., awarded eight first prizes and silver medal for honey at Essex Agricultural Show this season.—BIRD, expert Little Canfield, Dunmow. v 27

NUCLEI, with young laying queens, 4-frame, 12s. 6d.; 6-frame, 18s.; several strong, healthy stocks.—FURBANK, 1, Whitefriars-road, King's Lynn. v 28

5-FRAME NUCLEI, Carniolan hybrid, brood in all frames 1913 laying queens, 15/- each; boxes to be returned.—A. MAGSON, Kirkham, Lancashire. v 30

GOOD new full sections honey for sale.—J. MEPHAM, Orlestone, Ham Street, Kent. v 31

BEES, with young fertile queens, from 28th to 9th August, 1s. 6d. lb., guaranteed healthy.—ROSS, Glorat, Milton of Campsie, Stirlingshire. v 34

1913 TESTED QUEENS, 4s.; laying, 3s. 6d.; virgins, 1s. 9d.; nuclei and stocks at reasonable prices, prompt despatch, and guaranteed healthy.—R. WOOD, Spring Bank Ripon. v 40

FINE EXTRACTED HONEY, 1lb. screw top bottles, 8s. 6d. dozen; samples, 2d.—POPELEY, Lower Knarr, Ten Thorney, Cambs. v 43

FINEST LIGHT HONEY, in 28lb. tins, 70s. cwt.—WAIN, Thorpe Bank, Wainfleet. v 38

FIVE grand young laying queens, 2s. 10d. each, worth double.—OWEN, Liberal Club, Cheltenham. v 37

EXTRACTED HONEY, 1913, sainfoin and clover, good density and flavour, 60s. cwt., in 28lb. tins, free on rail, tins returned; sample, 2d.—ROGERS, Hatherop, Fairford, Glos. v 35

FOR SALE, pure English honey, in 14-28lb. tins, cash with order.—TOLWORTHY, Mortimer's-lane, Freckenham, Soham. v 33

4-FRAME NUCLEI, 1913 queens, healthy, safely packed, free, 12s. 6d.—GLOVER BIGGIN, Hulland, Derby. v 32

HEALTHY NATURAL SWARMS, 15s., safe delivery.—BRADFORD, expert, Tibberton, Droitwich. v 13

MICROSCOPE, student's, superior quality, first-class condition, sliding course, screw fine adjustment, substage diaphragm polarizer, objectives, Leach 1in, Johnson ⅔in, Beck ⅓in, eyepieces, two sets, stand, condenser, &c., in mahogany wooden case, cost over £12, accept £6.10, or part payment, good camera, general work, or lecturer's lantern. Approval; Deposit.—FRANKENSTEIN, 1, St. James's-terrace, London, N.W. v 18

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

RE-QUEEN NOW, with splendid strain hybrids, very quiet, very prolific, 5s. each.—ADAMS, Tilford, Heathhurst-road, Sanderstead.

NOW is the time to re-queen in order to produce young bees to strengthen stocks for winter.—Choice fertile tested English queens, excellent strain, safe arrival guaranteed; send for catalogue of up-to-date bee appliances. Winner of the first prize at Royal Shows, 1910, 1911, and 1912.—WILKES, Lichfield-road, Four Oaks, Birmingham.

1913 PURE FERTILISED CARNIOLAN QUEENS, 4s.; virgins, 2s.; safe delivery guaranteed, but not safe introduction. Orders executed in rotation.—FREDERICK VOGT, 63, Beresford-road, Canonbury, London.

BOWEN'S case saves money, sells honey, revolutionizes glazing, 9s. 6d. gross.—CORONATION, Cheltenham. v 32

FINEST QUALITY well filled sections, 8s. per dozen, free on rail; also extracted, 60s. per cwt.—T. PULLEN, Ramsbury, Hungerford. v 39

BEAUTIFUL QUEENS, Sladen's, 5s. each.—OLIVER KNIGHT, Epney, Stonehouse, Glos. v 36

Editorial, Notices, &c.

CHISWICK HORTICULTURAL SOCIETY

HONEY SHOW.

A successful honey and wax exhibition was held at the annual show of the above Society, in the beautiful grounds of Chiswick House on the afternoon of Thursday, July 3rd. Mr. W. Herrod, Secretary of the B.B.K.A., was to have judged the exhibits and given one of his popular lectures, but owing to his presence being indispensable at the Royal Show, his place was taken by Mr. G. R. Alder, Secretary of the Essex B.K.A., who made the following awards:—

Four 1-lb. Sections.—1st, H. C. James, Bicester.

Four Jars Extracted Honey.—1st, J. Mackenzie, Strethall; 2nd, A. Ross, Strethall; 3rd, H. C. James.

Beeswax.—1st, A. Ross; 2nd, J. Mackenzie.

THE NORTH OF SCOTLAND B.K.A.

A meeting of the North of Scotland Beekeepers' Association was held in Farraline Park School, Academy Street, Inverness, on Saturday, June 28th, at 3 p.m., Mr. A. W. Fraser, vice-president, in the chair.

The minutes of the previous meeting were read and unanimously adopted. The Secretary reported that, in accordance with instructions given at last meeting, a copy of a resolution in favour of the Bee Diseases Bill had been forwarded to Mr. Runciman, and all the M.P.'s for the North. The replies were read, and all were favourable.

A list of acceptances (from prominent gentlemen and public bodies in the North) to the Association's invitation to become patrons and honorary members, was then read, and the Secretary was instructed to prepare a list and forward a copy to all who had not yet replied, asking for an early answer, so as to complete list for publication as early as possible.

The committee reported in favour of adopting the *Bee-keepers' Record* as official organ of the Association. Mr. Urquhart, Aldourie, moved the adoption of the committee's recommendation, seconded by Mr Scott, Burgh Surveyor. Mr. McLeod, Drumsmittal, moved the adoption of the *Bee-keepers' Gazette*, seconded by Mr. Reid, Balloan. The Secretary spoke strongly in favour of the *Bee-keepers' Record*, and on a vote being taken Mr. Urquhart's motion was carried, only the mover and seconder supporting the *Gazette*.

A discussion then took place on the question of having honey classes and demonstrations in bee-keeping at the Farmers' Joint Show, to be held at Inverness on July 25th. A committee was appointed to arrange, if possible, for demonstrations. The date was considered too early for honey classes, the Horticultural Show in August or the Home Industries Exhibition in September being considered more suitable.

This being all the business, the meeting terminated with a vote of thanks to the Chairman.—J. R. Craik, Hon. Sec.

CROYDON AND DISTRICT B.K.A.

A demonstration and lecture with bees was given by Mr. J. N. Smallwood, on behalf of the above association on Wednesday, 25th June, at the annual show of the Croydon Horticultural Society, at Park Hill Recreation Ground, the bee-tent being kindly lent by Mrs. Seadon, of Bromley. The weather was ideal, and twice during the day Mr. Smallwood lectured and demonstrated to large audiences, many persons afterwards asking for further information. One little incident is, perhaps, worth recording, as showing the amount of good these demonstrations do. An elderly gentleman, who had listened with interest to the lecturer, came forward and expressed his desire to start bee-keeping, and purchased the complete beginner's outfit, which had been lent for the occasion.—A. Wakerell, Hon. Sec.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of June, 1913, was £6,684.—From a return furnished to the British Bee Journal, by the Statistical Office, H.M. Customs.

AMONG THE BEES.

FORCING BEES INTO SECTIONS.

By D. M. Macdonald, Banff.

We frequently hear grumbles at this period of the season, of bees being slow to go up into sections when first put on. If many of these hives were examined, the wonder would be if bees were to leave their warm, snug nest for such cold, draughty chambers, as are often supplied. Wrap all surplus chambers very warmly if you expect to tempt the bees upstairs. Again, when they are not covering all the frames in the hive, it would be folly to expect that they would take to supers. Combs must be all covered with workers before it is desirable to expect bees to ascend to such dry, comfortless and untempting quarters. Even with a good, strong force on hand, weather must be warm, forage abundant, and the overhead quarters made tempting before permanent work in the supers can be secured. It would be possible

to contract the number of frames and so compel the workers to start section building and storing in the completed cells, but this is an undesirable form of compulsion, because it affects the number of bees getting ready for the full harvest. Bait sections are a form of moral suasion, very desirable, and therefore they are very generally used in the first supers of the season. Bees can be further tempted up, and with even greater success, by an extension of the same principle. Before using section racks, place on a box of shallow frames fully combed. Being much more attractive than dry foundation, and the drier wood of the sections, bees eagerly ascend and generally stay there. Extending the same principle a step further, we can temporarily transfer a super from a strong hive when storing has well begun, and when our bees are well satisfied, withdraw it and give them their new super of sections. The habit of once ascending to work being formed, other things being favourable, the eager foragers will continue to disgorge their loads upstairs out of the way of the queen and her myrmidons. Many bee-keepers nowadays believe in having the outside of section-racks filled by shallow frames with the idea not only of tempting bees aloft earlier, but also because these are sealed better than outside rows of sections.

A Well-stored Larder.—Don't the two go together—a brood body, rich in stores, and a hive full of bees later on in the season? This, to my mind, is the meaning of the axiomatic saying, lately so often used, that spring stimulation should be done in later autumn, *i.e.*, that a well-provided store cupboard in every hive just before winter packing means safe wintering and successful "springing." In March, April, and early May, the abundant stores *in* the hive are a stimulant far more valuable than any supply given with the idea of increase. Two hives may start brood-rearing in early spring about the same date, the one well provided, the other sparingly. The one keeps up breeding uninterruptedly right through the season, the other does it by fits and starts. Their wonderful prescience informs the workers that they must restrict brood-rearing in accordance with the laws of supply and demand. The one is lavish of its stores, knowing full well that large reserves can be drawn upon: the other, living from hand to mouth, stints and pinches to tidy over the evil times. And they suffer in another way because every blink of sunshine tempts the workers forth to forage, for the stores they know is their very life. Hence a larger proportion of bees die off in this hive, with fewer young ones to replace them. Consequently they fall behind in the race, although at the start they may have been the more populous of the two. The obvious lessons to be learned from the foregoing facts are at least two. Do your spring feeding in autumn, and do it with a liberal hand. Stinting or scrimping never pays, therefore err on the safe side by giving too much rather than too little. It reacts on the stock affected right through the season.

Signs of Queenlessness.—The *signs* I am to give may have appeared in our pages before—I, myself, may have given them—but knowing that many newcomers have joined our ranks, and being well aware that even veterans are often hazy on this point they will bear repetition.

Open the hive, and on examining combs, if you find honey in almost every cell you can safely conclude that there is no queen, and at once proceed to introduce a mother bee to save the colony from extinction. Keep a very sharp look-out, however, for any small cluster of cells, dry and polished, so that they appear shining (they will generally be found near the centre of one of the centre frames, although this rule is not invariable). You can conclude that there is a queen actually present in the hive, even although you fail to find her. Such virgin or newly fertilised queens are very elusive and most difficult to find.

Having doubts of the presence of a queen during the summer season, and finding no brood—in the sealed or open form or any appearance of eggs—place a frame of brood in the centre of the hive containing eggs, and the bees themselves will soon tell you if they have a queen or not. If they have anything they value as such, they will simply nurse and seal the brood you have supplied them with in the normal manner. If, on the contrary, they have no queen, they will eagerly accept one of the tiny eggs or a larva lately hatched, and proceed to work marvels with the egg or grub. By enlarging the cell and feeding with concentrated food, they will produce another creature with new organs, capable of performing new functions—in a word, a queen-mother.

Wax Scales.—I read somewhere that an earnest student once ascertained, by careful count and weighing on a most delicate balance, that over one hundred of these scales weighed *one grain*. If so, then something like one million and a quarter would be required to weigh one pound. Think what a laborious task it has been to the wax scale producers to evolve from a thin, sweet liquid so vast a number of solid beautifully formed tablets, fair to the eye and of the most chaste construction. Ere the liquid sweet was transferred to these patient manufacturers, how many hard and exhausting journeys were necessitated before the flowers yielded their sweet nectar to those indefatigable

foragers, who brought it home to the hive. What a labour was that of the hard-wrought builders from the time the pincers seized those tiny particles of building materials until after masticating to secure ductility and malleability they proceeded to construct those exquisite hexagonal cells to be the future natal home of successive generations of future toilers or to form those vats wherein to store the luscious sweets necessary to perpetuate the race. I wonder how many thousands of these tiny scales go to make up even one batch of queen-cells. Fortunate it is for those toil oppressed builders that instinct (or, perhaps, necessity) taught them to use cheaply-collected propolis liberally in those royal palaces, in the sealing of certain cells, and in other constructions in the brood-nest.

A CORRECTION.

We much regret that an error appeared in the report of Royal Show (page 271), stating that the daughter of Mr. W. F. Reid was seriously ill. We are glad to be informed that the young lady is perfectly well. The invalid is Mrs. Reid, who we trust will soon be restored to health.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE "KENTISH" TREATMENT.

[8761] In connection with the criticisms and suggestions on the "Kentish" treatment of "Isle of Wight" disease, the information that follows may prove useful:

(1) Sulphate of quinine in *acid solution* is said to be one of the strongest germicides known. It was as a disinfectant of the bee's digestive tract that it was tried, not as a tonic.

(2) To dissolve it concentrated sulphuric acid was used; as many as ten drops, diluted by a gallon of syrup, had no apparent deleterious effect on bees.

(3) All my stocks were diseased by the end of September last. Every hive had been disinfected—some twice—without avail. No "contaminated stores" were removed from any hive; where the colony had consumed them it was given a full supply of medicated syrup. *This was stored by infected bees in contaminated combs.*

No attempt was made to disinfect frames or brood combs; in fact, short of their destruction, it is not possible. That diseased stocks transferred to clean hives with new foundation, and a supply of ordinary syrup, have consistently recovered, has not yet been placed on record. The reverse is very generally the case.

(4) *Sub idiary treatment* was only put into practice from the end of April last when the surviving stocks had been reinived. It had, therefore, no effect on the recovery of the five stocks mentioned.

In fine, disinfection of hives and surroundings both by myself and others, had been tried and failed to cure; of the ten stocks packed down for winter, only the five that had been supplied with more than 2lbs. of the medicated syrup reached the spring in good condition; for those, reinfection was feared as natural stores became abundant. To *check* this, a supplementary disinfectant treatment has been practised during the past three months.

My personal view is that a remedy to have any practical value, must be effective enough to pull diseased bees through an attack, in spite of an infectious environment, which it would be impossible to disinfect. No effort was made therefore to destroy the spores in the brood-combs. If the germicide in the syrup did so, well and good, but it was primarily intended to kill the developing parasite within the bee. That my stocks have survived and are increasing strongly, in the midst of disease, is due, in my opinion, to the quinine sulphate.—H. Wigley.

ANTISEPTICS AND "ISLE OF WIGHT" DISEASE.

[8762] "What proof have we that any antiseptic treatment . . . has had any effect?" (see page 275).

Surely this is a strange question for Mr. Kidd to ask at this stage. Are we not all agreed as to the cause of the disease? Do we not know that, whatever doubt there may be as to the effect of "safe" dilute doses of disinfectant applied direct to bees, there can be no doubt that the isolated parasite is killed if it comes into contact with strong germicide, such as is used for painting hive interiors? If so, it seems absurd to suggest that antiseptics are no good. There is ample evidence scattered throughout the pages of the Journal for the last year or so, of immediate and definite benefit indicated immediately after treatment of hives. Removal of contaminated stores is only half treatment. Disinfection is only half treatment. Unite the two and the result will be satisfactory.

Mr. Kidd is right in saying that bees suffering from the disease would retain the contaminated food in their bodies. I

have kept many such bees alive for a week, during which apparently no digestive processes went on. But if Mr. Kidd means to suggest that such bees would regurgitate this food into the cells in the new hive, I think he is wrong. What doubtless happens is that these bees die soon after hiving. By their excreta—which I have frequently noticed seems to be voided in one mass when they are *in extremis*—and their parasite laden bodies, they contaminate the new hive and its surroundings. Hence the disease breaks out again later in the year.

The essence of treatment, to my mind, consists in driving the parasite into a corner, so to speak. Get it into an isolated position, where it can be infallibly killed. At present it seems very doubtful whether we can attack it in the body of the bee, so that we can only do so by removing stores, thoroughly disinfecting hives and giving bees which have the parasite in their bodies an opportunity of getting rid of it.

Thoroughness is the secret of success in everything, and a thorough cleansing of the whole apiary in the manner I have indicated will have a better effect than the mere destruction of individual affected stocks.—Herbert Mace.

SHROPSHIRE B.K.A.

[8763] The Committee of the Shropshire Horticultural Society have informed the Committee of the Association that, having decided to reduce their expenses, they cannot make the usual grant, and in consequence the Committee are unable to hold the annual honey show this year. I shall be obliged if you will inform the readers of the "B. B. J." of the above, and I take this opportunity of expressing my regret to all our old exhibitors and intended new exhibitors, that after over thirty-five years' connection with the popular Floral Fête, the honey show has to be abandoned. There is every prospect this season that it would have been one of the best shows the Shropshire Association has ever held.—S. Cartwright, Hon. Sec.

A YEAR OF RUNAWAY SWARMS.

[8764] Bee-keepers here say that they never knew such a year for truant swarms; everybody seems to have lost one, if not more. At one tiny hamlet I know, all the bees were cleared out last year by "Isle of Wight" disease. The hives remained out, and in two days a man who had ten empty hives received swarms in two of them, and at the same time his neighbour who had fewer empties had one swarm come and hive itself. The nearest bees are two miles away, but I think these three swarms came three and a half miles. Another man further along the hills has also been presented by the bees with the means of making a new start. *Per contra*, a woman whose bees all died last year from "the pest," saw three swarms in one hour pass clean over her garden and disappear in the woods. I doubt whether there are thirty hives within five miles. I have in view two swarms in hollow trees, and hope to get one of them out in a month's time when there is honey to tempt the proprietors with. An old cottager who has lost one swarm believes strongly that in his younger days it was illegal to leave out empty hives to attract runaway swarms. I suppose it will shortly be illegal to leave out apiaries that have been devastated by *microsporidiosis*. However, as far as I can gather, the immigrants have not yet contracted the disease. It seems to be losing its virulence, and I was surprised to see in the Journal last week the statement, "There are signs of 'Isle of Wight' disease in bees sent. If they do not improve in the course of a few days, you should destroy the stock." This does not accord with the theory generally expressed that a stock once attacked is doomed. I have one case of apparent complete cure in my little apiary, and am expecting another. When things have gone a little further I will send a detailed report to the "B.B.J."—G. G. Desmond, Sheepscombe, Glos.

BEES IN ST. HELENA.

[8765] Will you be kind enough to state in one of the next issues of your Journal if there is any method by which blind lice (*braula cœca*) can be removed from a queen? Would the application of a feather dipped in Solution No. 10 in "British Bee-keepers' Guide Book," have the desired effect, or would the process harm or kill the queen? Will the presence of these parasites prevent her from laying? My reason for asking this information is that the climate here is so mild and equable that the lice do not disappear in the winter, but remain all the year through!*

I am an amateur bee-keeper, and had three hives about two months and a half ago. For days outside one of them the bees were clustering, so I decided to attempt for the first time making an artificial swarm, which seemed very easy according to directions given in the "Guide Book." On opening the hive, I found the queen on the second frame I

*To remove *Braula Cœca*, blow tobacco smoke into the hive, then lift the brood chambers from the floor board, and brush the latter clear of the bodies, as they will drop down stupified with the smoke. They do hinder the queen in her work of laying.—Eds.

looked at, and at once put this frame, with queen, into a clean hive, and filled it with nine more frames fitted with strips of foundation, and placed it on the stand where the old stock stood, after removing this latter to a new place twenty-five feet away. I gave a frame with a strip of foundation to replace the one removed. On the next and following days I noticed not many bees coming out of the old hive, and the new one with the queen in it nearly as strong as ever. I concluded most of the bees had gone back to the old location *en passant*. I may say this hive about a month after the operation sent out a swarm, which I lost, and is now rather weak, though apparently all right but as I had no spare queen or a queen-cell to give, I did not see what I could do but leave things as they were and watch results. The bees never seemed to increase, but rather lessened in numbers, though carrying in small quantities of pollen. So three days ago, two and a half months after making the artificial swarm, I decided to examine the hive, and found a queen immediately, but with a number of blind lice upon her (I should think twelve to fifteen), and no eggs or brood present in combs. As the hive appeared somewhat damp, I removed eight of the frames with the queen into a clean hive, and, in addition, put in two frames with eggs and brood from another strong stock, to which I gave the two frames having some honey in them; my reason for giving the two combs containing brood and eggs being that I thought perhaps the bees in the stock hive might raise a new queen, and depose the infested one, which I do not think has ever laid at all. I should like to know if I have done wrong, and if I should have destroyed her and taken the chance of a new one being raised?* And will you also say if a queenless hive will accept a queen taken from a cast, assuming she is not fertile? Some time ago one of my hives sent out a swarm, which I saved, and nine days after another issued. As I had a few days before discovered that another hive was queenless, I took the queen away from the cast and introduced her by a pipe-cover cage, leaving the bees to go back to their own hive. When I released her after forty-eight hours, she disappeared, and I could not see whether she was accepted or not, but the stock died out, and the other hive shortly after threw out another swarm, which I lost, so I did not gain much by my manipulation. No doubt I could have united the cast with the queenless stock, but I wanted to prevent the other hive being too weak.

This place is so different in climate to England that the rules given in "Guide Book" are not always applicable. Drones, from my experience, are seldom killed or driven out; at all events, they seem to be about all the year through. Hives do not send out swarms regularly every year or during certain months only, though I think most swarming takes place in spring. I have known several hives not to have swarmed in three years; but, on the other hand, I have had three swarms from one stock in three months (one in November and two in February). This hive was kept in my dwelling-house by an open window, and was under constant observation, so there was no mistake. To my knowledge, swarms have issued in July (corresponding to English January), August, October, November, December, February, March, and May.

I do not think this is much of a place, on the whole, for honey producing, as there are but few wild flowers. Bees do best between sea level and an altitude of 1200 feet, where there is plenty of prickly pear (cactus) and aloe. Within the last few months I have resided in a place 1900 feet above sea level, and I feel sure my bees will not do well, as at that height here it is very damp. Some years ago, when living 300 feet or 400 feet lower down, I kept an account of the weight of comb honey I took from eight hives, and the average for the year was 32lb., one giving nothing, and the highest 70lbs.

There are not many bee-keepers on the island, and very few have hives on proper principles, that is to say, with brood-chamber and supers above. Honey is never removed from the combs by an extractor if it is desired to separate it; straining through muslin or some sort of lace is the method adopted.

The islanders keep their bees in a box measuring about two cubic feet (say, 24in. by 12in. by 12in.), the lid hangs down fastened by leather hinges, and is perforated with holes large enough for the bees to go in and out, and when the swarm has been put in the box the lid is tied down tight, and the box placed on its side lengthways on a stand. At a certain time of the year, say, October (corresponding to English April), most of the combs are cut away, leaving the bees to build fresh ones; then, in December and next two months, whatever honey is made is taken. It seems a wasteful process, as a quantity of brood and eggs is destroyed; but, in spite of that, some of the bee-keepers take a fair quantity of honey, and no doubt there is an advantage in there never being much old comb in the box. No attempt is ever made to save a colony; if one or more be lost, the matter is treated very philosophically, it is either "Kismet" or they (the bees) have flown away, or the

*The queen had not been fertilized. If you remove her and let the bees remain queenless for twelve hours, they will accept a virgin.—Eds.

death's head moths have killed them! but I have never heard of a beekeeper destroying his bees by sulphur or other method to obtain the honey.

The death's head moth is a great nuisance here, and is more or less in evidence all the year through, going for the hives just after sunset and before sunrise; its object, of course, is only the honey, but they worry the bees which come out when the moth is about to enter, and many fall to the ground and die if it is chilly and wet. I now adopt the plan of fixing at sunset in front of the entrance a strip of drone wire, which, at all events, prevents their entering the hives. Two years ago I went to Europe, leaving my five hives in charge of a person who subsequently left St. Helena, and handed them over to somebody else. When I returned after an absence of eighteen months I only received back three stocks. I decided to transfer the bees to fresh hives, and in one of the old hives, which had not been examined for quite six months before I left here, I found the remains of two hundred and forty-seven moths! They must have accumulated in two years or so. Some time back I was clearing out a hive and found a dead moth on the floor waxed fast in a most natural position, and I wondered whether it had been fastened down when asleep in the daytime!

I have written at some length on the chance that you might think part of my letter might be of sufficient interest to your readers to be published in the JOURNAL.—H. J. BOVELL.

BEES COLLECTING HONEY-DEW.

[8766] I should be very much obliged if you would explain why my bees are working on the oak and lime leaves. Although there is plenty of white clover about, they do not appear to be working on it much. I may say we have had no rain for a considerable time in this district, so that possibly there is no nectar in the clover.

If it is, as I think, that bees are gathering honey-dew of the leaves, will this affect the honey? When I am extracting, of course, the various sorts get mixed.

Possibly it would be interesting to your readers to know my experience of "Isle of Wight" disease. I am a novice, and bought six stocks in old hives and skeps in the spring of 1912. I joined the Association, and the stocks were certified by the expert in autumn as having "Isle of Wight" disease. Very sad at heart, I invested in new hives, and dressed with Ayles' cure; fed down for winter with recipe No. 6 "Bee-keepers' Guide Book." Bees came through winter weak, and were again visited by expert, whose verdict was "Slight trace 'Isle of Wight'; will want watching." Result to date: One hive swarmed at end of June, four others are double supered, and one hive, which was very weak to start with, is now covering nine frames, but has not stored any surplus. I may say that the swarm was a very strong one, and started work at once, with the result that the bees now cover eight frames.

The reason that I have had no more swarms is that so far as possible I am trying to prevent them. We are late in this part of the world, as we have still plenty of white clover, and the limes are not yet in blossom.—A. B., Worcestershire.

[Owing to lack of rain, the clover is not secreting, and for the same reason honey-dew is prevalent. If it gets into the honey it will most certainly spoil it for selling.—EDS.]

MICROSCOPIC SLIDES OF *NOSEMA APIS*.

[8767] I have made arrangements with the Clinical Research Association to prepare a number of microscopic slides of *Nosema apis*, both sections of the stomach and smears of the stomach walls, showing the parasite in its various stages of planont, meront, and spore. Sections will cost about 1s. 9d. and smears about 1s. 3d. each, or slightly less if a dozen or so were sent to one address.

I may mention that no profit whatever will accrue to me (I have had considerable difficulty getting anyone to undertake the work), and unless a minimum of sixty slides are taken, expenses will not be met. If you know of anyone who would like slides, will you kindly pass the information on?—C. HANSLOPE BOCOCK, The Elms, Ashley, Newmarket.

THE SEASON IN LANARKSHIRE.

[8768] I read "J.R.'s" letter (8750, page 252) on above subject with interest. So far as the weather conditions are concerned they quite describe what we have experienced in this district (Dumbarton), although, in the matter of swarming, in at least one instance, we have been more fortunate.

On Sabbath, June 1st, a young beekeeper in the neighbourhood, Master Mumford, whose apiary consists of two hives, had two swarms issue about 11.30 a.m. The young gentleman having gone to morning meeting, his father, who never had previously hived a swarm, came over to solicit my assistance. We hived the swarms in the usual way. They were two beauties, weighing about 5lbs. and 7lbs. respectively.

On Saturday, June 14th, I had gone from home for the afternoon, and on returning about 8 p.m. was surprised to hear that Master Mumford's bees had swarmed again. Like a bee-man good and true, I went over at once to see if I could help, and found that he had again been caught napping; in other words, being an ardent scout-master, he was out with his troop. However, his father had so far benefited by his experience of June 1st that he not only had hived the cast, but he and his good lady were hard at work cutting out queen cells from the other stock.

On examination I found both stock and cast weak in numbers, and proposed that all queen cells should be cut out and the cast returned to the parent hive. This was done, giving them also additional room, and as feed was rather scarce, gentle feeding was resorted to.

Forage is very scarce in the district this year, the clover is now in full bloom, but very little storing is going on.

With reference to the letter from your correspondent, G. B. Bridgeton (8760), "B. B. J.," July 10th, I have long felt that we ought to have at least a District Association, and although I only keep a few hives for amusement, I would be only too pleased to see some sort of society formed, where meetings could be held and successes and failures discussed.

Should "G. B." find it convenient to call on me any evening or Saturday afternoon, I will be glad to have a talk on bees with him, and let him have a look over my hives. Meanwhile, he could not do better than get the "British Bee-keeper's Guide Book," by T. W. Cowan, and study it.—J. B. (Bridgetown).

[We thank you for offering to assist our correspondent, and have sent him your address.—Eds.]

"I.O.W." DISEASE.

DESTROYING DISEASED STOCKS.

8769] I have nothing new to communicate. That the dread disease is invading districts where previously it was unknown, is unfortunately not news. It has come into this district, and young bees—starters—and drones are affected equally with working adult bees. According to the symptoms described in the "Guide Book," the disease might be either "malignant dysentery," or "'I.O.W.' disease," or "May pest." May not these three diseases be in reality one and the same, climate and weather causing slightly different symptoms?

Now, to be more practical. It occurs to me that the oft-repeated advice, "Destroy the lot," will not infrequently be neglected, or postponed indefinitely through want of means and opportunities, lack of time, knowledge, &c. The advice, "Burn the lot," appeals but little to the man whose hives have fixed floor-boards, whose garden is fully cropped, who is unacquainted with the use of poisonous drugs, and lives miles distant from a chemist, and who has but little time at his disposal—such advice, I say, appeals as little to him, as does the advice, "Go to the seaside," to the sick man who is tied to his business or occupation for a living. The "Guide Book" does not teach how to destroy stocks. Will not some experienced persons, through your useful columns, describe fully in detail the methods of destruction they have found to be easiest and best and so deserve well of their fellow bee-keepers, for stamping out seems to be the only real hope for bee-keepers at present!—H. T. S.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Artificial Increase (p. 242).—Of the many plans given by "D. M. M.," I use the following:—(No. 1) Take the whole of the brood-combs (without bees) placing these over a fair stock which is not doing much good in the super. Remove and requeen when sealed. If these are placed over excluder as stated by "D. M. M." and criticised by Mr. Mace, admirable cells are sometimes obtained. (No. 2) Break up into nuclei a stock which has swarmed naturally. In either case give the supers to the swarm. Swarms are hived on starters with one brood-comb to catch the pollen or continue brood-rearing. Such increase is usually made when supers are on the hives, and I regard the taking of combs from a number of hives with abhorrence. Apart from the risk of spreading unsuspected disease, I could not "thoil" the labour and attendant interference with storing which such wholesale manipulation of supered stocks would involve. Of course, there might be years when the operation would be useful, but, generally speaking, the plan is of doubtful utility, or shall we say, is unsuited to my temper! Unless combs are extraordinarily perfect, they take some fitting together, and after all sorts of experiment, I have come to think that brood-nests are best kept intact.

Preventing Drone-rearing (p. 248).—I wonder if the Editor will allow me to tilt at the advice given here. I have examined a stock to see whether his plan would be practicable, and I venture to doubt it. Close spacing is hardly possible after the combs have been built out at the top jig-saw fashion. At least, if they are closed to such an extent as to force the drone cappings against the opposing comb, the

honey also will be in contact. This means that the combs would become braced together in all sorts of places as the bees dug their way between, causing much work to straighten again; only a portion of the drone-comb would be affected, so that the cure at best could be only partial, and as such comb, in which the drones would presumably die, would be best cut out, would it not be better to do this straight away and have done with the trouble. If cutting of the comb is undesirable, an escape for the hatching drones may be easily arranged either into the open air or past one edge of the excluder, or in the case of a "W.B.C." hive, by withdrawing the lower body-box a half inch or so from the bridge, and allowing the upper to project forward.

Spring Cleaning (p. 252).—I should like to endorse what Mr. Lee says about floor-boards. Long before manipulation can be indulged in clean floor-boards can be given with benefit. No one who has practised this would believe what a mess of wet cappings, &c., sometimes exists in early spring. This is best removed by the owner, who can satisfy himself of the condition of the stock at the same time, and rest happily that night after the first real bee-day of the year. Failing spare floor-boards, those from stocks which have perished may be used, such hives being thoroughly cleaned as soon as discovered for the sake of the combs. This is the time when extra roofs are not in urgent demand, and faulty ones may be exchanged and painted. It does seem absurd to leave the winter work until summer, a sin to which most of us are liable!

Prevention of Swarming (p. 254).—This plan of Dr. Miller's, commended by Mr. Root, will, no doubt, discourage or delay swarming, but one objection to it is the emergence of drones referred to above. The use of brood-combs for extraction is not to be recommended where the finest grade of honey is wanted, and I take it to be wanted generally. Would it not be better to use such combs for queen-mating nuclei when the brood is mostly hatched? Such nuclei would need little or no attention in the way of feeding, probably for the whole season of their use, whilst the force of bees in the stock hive is concentrated in the supers, now so much nearer to the brood-nest proper. The supers would thus be above a new set of combs, a point conducing to good section work.

Queries and Replies.

[8775] *Extracting.*—(1) Would you please say how often the extractor should be cleaned? Last year, having extracted my honey, I went for my holiday and left the machine with honey sticking all over cage and sides. On my return a month later, without cleaning it, I extracted more honey and spoilt the lot, the flavour being vile and only fit to feed bees with. (2) If I extract for several days in succession, is it necessary to cleanse the extractor every evening? And if this is not done, is there danger of spoiling the honey? (3) Was it the action of the tin which spoiled last year's lot, or was the honey unripe? An answer in your excellent paper would be esteemed. Your correspondence column is interesting above all, and I wish it could be extended greatly.—H. C., Felixstowe.

REPLY.—(1) The extractor should be washed out after it has been used. It was foolish to let it stand for a month and then use it without washing. (2) If you extract for several days in succession there will be no need to wash the machine until immediately after the last lot has been dealt with. (3) If it is a tin extractor there would be no action, but if there are galvanised parts the action of the acid would make the honey poisonous. By exposure to air the honey would absorb moisture and ferment; this, no doubt, was what happened in your case.

[8776] *A Beginner's Queries.*—(1) My hive swarmed on June 18th without any warning, but a friend hived the swarm in a box for me, the same evening I cut out all the queen-cells from the parent stock, and returned the swarm and queen (a last year's one). Did I do right? (2) I had a super and excluder on this hive the last week in May, but although the bees used sometimes to go up into the super they did not start drawing out the foundation until a few days before they swarmed (and directly I took away the excluder). They have started filling the cells with honey to-day. As we have several dozen lime trees, lots of white clover, and plenty of cultivated gardens, is not this rather slow? (3) How many quilts ought to be used in a "W.B.C." hive this weather. I am using first one of calico, two of drugget, as supplied with hive, and a clean sack folded and laid on in such a way as to cover the space between super and outer cover. As the bees hang out on the alighting-board a great part of the day I have wondered if they are too hot. (4) As I can only keep one stock, and do not want swarms, ought I to go through the hive, say, every three weeks, and cut out queen-cells, or would this disturb bees too much. People about here are afraid of bees, so if they do swarm, despite my precautions, I have cut the tip of the queen's wings to prevent their flying far. (5) My bees are bred from a Sladen's Golden queen, and

have three broad yellow bands on them. What breed are they?—PERPLEXED, Wimbledon.

REPLY.—(1) Yes, if you did not desire increase. (2) The bees were evidently hindered a little by the excluder. (3) The covering is all right. You should raise the brood-chamber and outer case an inch all round. (4) Room in advance of requirements and sufficient ventilation will usually prevent swarming, and we should not disturb the bees to cut out queen-cells. (5) They have evidently been crossed by British bees.

Bee Shows to Come.

July 23 and 24, at Cardiff.—Glamorgan Bee-Keepers' Association, in connection with the Cardiff and County Horticultural Society's Show. Open classes for collection, sections, &c.

July 23rd and 24th, at Wolverhampton.—Staffordshire Agricultural Society's Show. Bee and Honey section, under the direction of the Staffordshire Beekeepers' Association. Open classes for appliances, observatory hives, extracted honey, and sections.

July 23, 24, and 25, at York.—Show of Hives, Honey, &c., in connection with the Yorkshire Agricultural Society's Show.

July 31st to August 4th, at Burnley.—Honey Show of the Royal Lancs. Agricultural Society. Eight open classes for Honey, &c. £50 in prizes. **Entries closed.**

August 6th, at Stoke Park, Guildford.—Annual Exhibition of Bees, Wax, Appliances, &c., will be held by the Surrey B.K.A., in connection with the Guildford and West Surrey Agricultural Association. Nineteen classes (five open to all). Many medals. Schedules from F. B. White, hon. secretary, Marden House, Redhill, Surrey. **Entries close July 26th.**

Aug. 7th, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Three open classes; one for single 1lb. jar of honey (entry free). Schedules from G. Richings, 2, Shrubbery-terrace, Worcester.—**Entries close Aug. 2nd.**

August 7th, at Bruton.—The Annual Show of the Somerset Bee-Keepers' Association, in connection with the Bruton Flower Show. Open classes. Schedules from Mr. R. Litman, South-street, Castle Cary, Somerset. **Entries close August 2nd.**

August 13th, at Wye, near Ashford.—Kent Honey Show, 12th Annual Exhibition. Classes to suit all bee-keepers. Splendid prizes; small entrance fees. One 6 guinea and two 5 guinea challenge cups; also a 2 guinea champion silver cup. A new class this year for six 1lb. of extracted honey, put up in short bottles, or other vessels, suitable for getting honey out of easily, and for sending honey away in. Open to United Kingdom. Two silver medals best exhibits of bee appliances. Twenty-five different classes to enter in. Staging and repairing carried out by experienced men. Prize schedule and entry form free on application to Mr. Alfred Lepper, secretary, Kent Honey Show, Scotton Street, Wye, Kent. Prize schedule and entry form will be sent to all exhibitors of last year without application.

August 19th and 20th, at The Dome, Brighton.—Annual Show of the Sussex Bee-keepers' Association, held in connection with the Brighton, Hove, and Sussex Horticultural Society's Summer Show. Six open classes for honey, including single bottle and section. Schedules from C. A. Overton, Hon. Sec., Beecroft, Crawley, Sussex.—**Entries close August 11th.**

September 3rd, at Lancaster.—Lancaster Agricultural Society. In conjunction with the Lancashire B.K.A. Classes for honey, bee produce. Specials, including two silver challenge cups, two silver and one bronze medals. Write for honey schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 27th.**

September 12th and 13th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes, with liberal prizes for appliances, extracted honey, sections, fitting-up frames, fitting-up sections, judging competition, &c., &c. Schedules from G. Hayes, Mona street, Beeston.

Sept. 24th and 25th, at Kendal. The Annual Show of Honey, Wax, and Appliances of the Cumberland and Westmorland B.K.A., in connection with the Northern Counties Fruit Congress, in the Market Hall, Kendal. Eleven open classes. Liberal prizes. Note.—All prize-money will be paid on second day of show. Schedules from G. W. Avery, Wetheral, Carlisle, or Geo. Chatham, Low Green, Staveley, Kendal.

Notices to Correspondents.

F. T. (Preston).—*Transferring Bees.*—Both lots of bees are affected with "Isle of Wight" disease. This will account for their not working down.

G. D. (Chelmsford).—*Sections from Diseased Hive.*—The honey is quite fit for household use, but great care should be taken that no bees have access to it.

H. T. S. (Hastings).—*Destroying Condemned Bees.*—(1) The best method of destruction is by means of cyanide of potassium. A piece about ½in. in diameter dissolved in 1oz. of water is sufficient to kill a stock. Stop up the entrance at night and pour the cyanide into the brood-chamber by turning back a corner of the quilt. (2) It varies from a fortnight to several months. (3) The honey is quite fit for human consumption, but great care should be taken that other bees do not have access to it.

Suspected Disease.

REV. L. MASON.—Your friend had already sent us a piece of comb. It contains pollen only. Pollen varies in colour from black to very pale yellow, almost white in fact, in different flowers.

E. L. L. (Belvedere).—It is "Isle of Wight" disease. On no account should you give the super to healthy bees to seal.

F. H. R. (West Wickham).—The bees were simply drowned in honey, so we could give no opinion on them.

G. H. A. (Glos.), F. H. A. (Hinckley), HOPEFUL (Andover), and W. J. (Cardiff).—The bees have "Isle of Wight" disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at 1d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of 3s. per ¼in., or 5s. per inch.*

PRIVATE ADVERTISEMENTS.

SPLENDID 1913 honey, 15s. per 28lb. tin; sample, 2d.—BULTON, Terling, Essex. v 24

FOR SALE, 5 to 10cwt. fine quality honey. 5½d. lb, purchaser to find vessels. Deposit. KIGHT, Highworth, Wilts. v 67

WANTED, latest make of geared extractor and ripener.—3, Regent Grove, Leamington. v 54

FINE Essex honey, 1lb. screw jars, 8s. 6d. dozen, three dozen at 8s., cash with order.—BRUNETTE, River View, Thundersley, Essex.

GUARANTEED healthy, three stocks young queens, 27s. 6d. each.—92, Beaumont-road, Bournville. v 64

GEARED tin extractor, also large ripener and strainer nearly new.—BECKENSALL, Ringwood. v 62

3CWT. EXTRACTED HONEY, from clover dense and nearly white, in ½cwt. tins, best offer accepted.—MISS GORDON, Wethersfield, Braintree, Essex. v 47

SITUATION WANTED by man (65), experienced in utility poultry, bee culture, and gardening; highest references.—"B.B.J." Office, 23, Bedford-street, Strand, W.C. v 59

GEARED HONEY EXTRACTOR, equal new, 18s. 6d., packed on rail.—EDWIN GLOSSOP, Ambergate. v 61

WANTED, healthy driven bees, box found, August delivery; quote price.—AVERY, Deverill, Warminster. v 60

CHOICE BREEDING QUEENS, fine honey-gathering strain, bred 1912, 2s. 6d. each, post free.—ALUN JONES, Halkyn, Flintshire. v 48

THREE strong skeps of driven bees, guaranteed healthy, 5s. each, with skeps.—T. GEORGE, Henbury, Bristol v 45

STRONG, healthy nuclei, on six frames, with four frames of brood and 1913 prolific laying queens, 15s. each; a few stocks for disposal, on ten frames brood with 1912 queens, 30s. each, guaranteed healthy, no disease of any kind in the district.—A. SHARP, Halstead Farm, Barrowford, Lancashire. v 56

WANTED, glass quilt, embedder, feeder; bee books, Simmins, Edwards, Miller, Doolittle, Langstroth, Cook; Poultry Book, Wright.—Particulars to BARDEN, 11, Wythenshawe-road, Sale, Cheshire. v 55

SCHEDULES WANTED of shows with open honey classes.—HARRY WARD, bee-keeper, Leamington Spa. v 53

FOR SALE, few guaranteed healthy stocks, on ten frames, in good W.B.C. pattern hives, 30s. each.—SIEBEL, Hazel Grove, Stockport.

ABBOTT'S latest W.B.C. 27s. hive, new and unused; also Lee's W.B.C. hive, with many appliances, in good order; best offers.—120, Cranbrook-road, Chiswick. v 51

3 STOCKS BEES, young, vigorous queens, healthy, packed free, 25s.—BERNARD SKINNER, Dereham, Norfolk. v 50

DRIVEN BEES WANTED August 1st, guaranteed healthy.—W. TOMLINSON, Crimicar-lane, Fulwood, Sheffield. v 49

HEALTHY BEES FOR SALE; full particulars on application.—"B.B.J." Office, 23, Bedford-street, Strand, W.C. v 46

PURE CAMBRIDGESHIRE HONEY (light), 28lb. tins 6/s.; sample, 3d., cash with order.—J. YOUNGER, 51, Maid's Causeway, Cambridge. v 44

SPLENDID HEALTHY SWARM, on seven wired frames, £1, carriage paid.—GREGSON, Ashton-street, Lytham. v 57

WANTED to purchase, secondhand Root-German wax extractor; send particulars.—HILLMAN, Stonehouse, Glos.

1913 TESTED QUEENS, 4s.; laying, 3s. 6d.; virgins, 1s. 9d.; nuclei and stocks at reasonable prices, prompt despatch, and guaranteed healthy.—R. WOOD, Spring Bank Ripon. v 40

FIVE grand young laying queens, 2s. 10d. each, worth double.—OWEN, Liberal Club, Cheltenham. v 37

4-FRAME NUCLEI, 1913 queens, healthy, safely packed, free, 12s. 6d.—GLOVER BIGGIN, Hulland, Derby. v 32

HEALTHY NATURAL SWARMS, 15s., safe delivery.—BRADFORD, expert, Tibberton, Droitwich. v 13

WANTED, FIRST GRADE SECTIONS and light Honey in bulk, Prompt Cash.—COOK, Terwood, Ashford, Middlesex.

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

SECTIONS WANTED, glassed or unglassed, by HONIELADE CO., 23-25, Moorfields, London, E.C.

"I.O.W." DISEASE; Gloucestershire remedy; bottles, 1s. 6d.—BOWEN, Coronation, Cheltenham.

BOWEN'S "Display" cases outsell everything. 5s. 9d. to 9s. 6d. gross.—Coronation, Cheltenham.

HEALTHY DRIVEN BEES; few lots for July delivery, 7s. 6d. per lot.—T. BRADFORD, expert Tibberton, Droitwich. v 63

1913 FERTILE QUEENS, 3s. 9d., safe arrival guaranteed; wanted, pullets.—TOLLINGTON, Woodbine Apiary, Hathern. v 65

WANTED, HUMBLE BEES' NESTS (large and small), nests of large humble bees preferred.—BEE MASON, 22, Hanway-street, London, W.

1913.—PURE imported Golden Italian fertile queens, guaranteed healthy, vigorous, prolific, 4s.; specially selected, 7s. 6d. each, prompt despatch.—J. B. GOODARE, Woden Apiary, Wednesfield, Wolverhampton. v 93

FOR SALE, complete hives of bees, golden colour, with frames and sections.—BARKER, 23, Bolton-road, Grove Park, Chiswick. v 58

SECTIONS WANTED, any quantity, cash; also extracted.—F. W. WEITZEL, 21, Lonsdale-road, Kilburn, N.W.

RE-QUEEN NOW, with splendid strain hybrids, very quiet, very prolific, 5s. each.—ADAMS, Tilford, Heathhurst-road, Sanderstead.

NOW is the time to re-queen in order to produce young bees to strengthen stocks for winter.—Choice fertile tested English queens, excellent strain, safe arrival guaranteed; send for catalogue of up-to-date bee appliances. Winner of the first prize at Royal Shows, 1910, 1911, and 1912.—WILKES, Lichfield-road, Four Oaks, Birmingham.

1913 PURE FERTILISED CARNIOLAN QUEENS, 4s.; virgins, 2s.; safe delivery guaranteed, but not safe introduction. Orders executed in rotation.—FREDERICK VOGT, 63, Beresford-road, Canonbury, London.

BEAUTIFUL QUEENS, Sladen's, 5s. each.—OLIVER KNIGHT, Epney, Stonehouse, Glos. v 36

Editorial, Notices, &c.

KING OF UGANDA AND BEE PICTURES.

Mr. Bee Mason was honoured by a command from the King of Uganda to lecture on his marvellous films before his Majesty and suite in Sheffield recently.

Mr. Mason lectured on his pictures of the life of the bee and the bee-hunter, and at the conclusion of the performance the King sent one of his Ministers to compliment Mr. Bee Mason on the excellence of the films, and to express his Majesty's appreciation of the entertaining and educational lecture and exhibition.

THE NORTHUMBERLAND B.K.A.

Those who have been through the mill, and know the labour entailed in starting a new B.K.A., will, I am sure, congratulate us, as we most heartily do ourselves, on having secured such a well-known exponent of bee-craft as Mr. Joseph Price, Haden Hill, Staffordshire, to start us with an autumn tour. He has virgin soil to work on, as many districts in this large county have never heard of an expert or an Association, so that he will have full scope for his energies, and the benefit to the craft cannot fail to be great.—F. Sitwell, Hon. Sec., N.B.K.A.

NEW B.K.A. FOR BRIDGNORTH AND DISTRICT.

As a result of an article which appeared in the local Press a few weeks ago, a representative number of bee-keepers met together at Bridgnorth on July 3rd, with Mr. A. Edge in the chair. It was unanimously agreed to form a Bee-keepers' Association for Bridgnorth and District, the radius being fixed at ten miles around Bridgnorth. Mr. J. S. Lawton was elected secretary. Names of influential gentlemen who are interested in bee-keeping were suggested for the positions of president and vice-presidents, and they are to be waited upon to obtain their consent to their appointment. The following members comprise the committee, with power to add to their number: Messrs. W. Shuker, Hall, H. Hulme, A. Edge, E. Pee, and J. S. Lawton. It was reported that the committee of the Hampton Loade Flower Show were willing for the Association to hold a honey exhibition in connection with their show, at which special prizes will be given to members of the Association.—J. S. Lawton, Hon. Sec.

RANDOM JOTTINGS.

By Charles H. Heap.

"BIG BEE-KEEPERS" AND THEIR OPPOSITION TO LEGISLATION.

It is a great disappointment to many thousands of bee-keepers throughout Great Britain to find the present session of Parliament, like the last, slipping away without the passing of that legislation which is so urgently needed to place apiculture on a less precarious footing. The Bee Diseases Bill is demanded by such an overwhelming majority of bee-keepers that one wonders why the Government, as indicated by Mr. Asquith's recent announcement, should pay any regard to the opposition to the Bill on the part of a handful of bee-keepers, who described themselves as "big." Of course, financial considerations may possibly have something to do with the slow progress of the measure, but it is certain that the longer legislation is delayed the greater will these considerations become. While legislators are dallying, the evil continues to spread from district to district, from county to county. Had the question been boldly tackled two or three years ago the cost of eradicating "Isle of Wight" disease would have been far less than it would be to-day; in fact, every year's delay will add to the ultimate cost. It is useless to expect the disease to die out so long as a supply of hosts is provided. This is being accomplished by the large trade done in swarms, driven bees, and bees on combs, and there are people "on the make" who have no compunction in selling bees from districts, and even apiaries, in which the disease exists.

It is common knowledge that *microsporidiosis* has been spread over the land by means of purchased swarms and driven bees, and I have heard of diseased bees on combs being sent out by "big bee-keepers." One case of this kind came under my personal notice. A novice ordered from a well-known apiarian and dealer in bees a six-frame nucleus of a certain variety of *Apis mellifica*, and I was asked to release the bees from their travelling-box and transfer them to a hive. I instantly saw that the bees were suffering from "Isle of Wight" disease, and they were returned within a day or two to the dealer, who was inclined to whine because the bees were not sent back "carriage paid."

Traffic in Diseased Bees.—*Microsporidiosis* is not the only menace to successful bee-keeping in this country. The old enemy, foul brood, has to be reckoned with. We are not so powerless against this enemy, but disease will never be properly dealt with so long as every bee-keeper is a law unto himself. If we had legislation, not only would restrictions be

placed upon the movement and sale of diseased stocks, but in all probability some check would be put upon dealings in bees from apiaries in which brood disease in various forms exists. It is this aspect of the legislative question that troubles the "big bee-keepers." The apiaries of one or two may be free from disease, but I venture to think that a thorough examination would reveal the fact that the majority are not. How can they be? Most of the "big bee-keepers" are located in good honey-yielding districts, and what experience I have had goes to show that the disease is most rife in the best districts, due to a large number of people who never ought to own bees entering the industry. The apiaries of some "big bee-keepers" not only contract disease in the natural way by the robbing of diseased stocks in the neighbourhood; but the disease is actually imported into them by the "big bee-keepers" themselves.

Stocks at 8s. 6d. a-piece.—I hope readers of the "B.B.J." will not attempt to guess who the bee-keeper is, for they are almost certain to guess the wrong one, but I recently heard of a "big bee-keeper," who is opposing Mr. Runciman's Bill, buying up last autumn the bees in two apiaries. I had previously paid visits to these apiaries, and know that foul brood existed in both. In one apiary it was in an advanced stage, but the bee-keeper adopted no remedial measures, and several stocks had succumbed before the sale took place. I doubt whether anything was done to check the disease in the other apiary, as the owner was battling with an illness that proved fatal. What was paid in the second case I do not know, but my informant told me that he received 8s. 6d. per stock for his, including the home-made frame-hives, and that he was glad to get rid of them at that price. Some months ago I heard from the lips of another vendor that a bee-keeper in a large way of business bought up his apiary of about twenty stocks, which he knew to be diseased, and carted them away. The bee-keeper told me himself that he received a sovereign for each lot. To my congratulations on striking so good a bargain, he gave an enigmatic smile. News of his bargain had reached an apiary five miles away, belonging to a spinster, strongly imbued with the commercial instinct, who as she squirted an antiseptic in little patches here and there over a comb containing foul brood, bitterly deplored the fact that she had not offered her bees for sale at one pound a hive. This business-like lady promised to try a more effective remedy; but declared that if they were not cured by the autumn she would approach the gentleman who bought Mr. Z.'s foul broody lot.

Public or Private Good.—I ask any practical bee-keeper: In what state can the apiary of a "big bee-keeper" be when diseased stocks are introduced to it in this fashion from places miles away? What is the value of such opposition to legislation, and what is the motive underlying it? I am inclined to think the motive is the promotion of self-interest at the expense of others engaged in the industry. My view is that purely private gain should be subordinated to the public good. What we have to consider then are the interests of apiculture as a whole and not those of a small section of those persons engaged in it. To my own knowledge legislation is keenly desired by bee-keepers at large. During the past spring I visited nearly 400 apiaries and examined thoroughly at least 1,300 or 1,400 stocks in frame hives. I only know of one bee-keeper whose apiary I visited and another whose apiary I was not invited to enter, who are opposed to legislation. I am not acquainted with the views of the first, but the other objected to legislation on the ground that he would not be able to sell bees when and how he pleased. What wonder that the other bee-keepers I met, in three widely separated counties, desire the passing of the Bee Diseases Bill, seeing that in at least fifty per cent. of their apiaries there was disease, against which many of them were battling without heart and with very little hope. The more I see of the conditions under which the bee-keeping industry is struggling, the more convinced I am that some national step should be taken to rid the country of the greater part, if not the whole, of the bee disease that exists. A national step is needed, because the unnecessary wastage of bee-life is a wastage of national wealth, affecting everybody directly or indirectly. The wastage of honey from lack of bees to gather it is enormous; but with fewer bees—and bees were perceptibly fewer in the districts I visited this spring—less honey will be gathered, fewer flowers will be fertilized and there will be less fruit and seed of the finest quality. Is all this to happen to serve the fancied interests—I doubt whether they are the real interests—of our few "big bee-keepers."

HOMES OF THE HONEY BEE

AND APIARIES OF OUR READERS.

As a very small boy, I was invited to tea at the house of a friend of my father; this friend was an enthusiastic bee-keeper in a small way, having two or three frame hives, with observation windows in the backs and sides, and here I first was shown the wonders of the hive. I there and then determined that, if ever the opportunity

offered, I would myself keep bees. This opportunity did not occur until I removed from town to Witham, in 1908, and during this interval I came in contact with Mr. G. R. Alder, the well-known secretary of the Essex B.K.A. From him I learned more of the working of the hive, and on several occasions I heard him lecture and saw him demonstrate. Early in 1909, after considerable searching, I found some bees for sale close to home, and bought five stocks in very decrepit hives. The home-coming of these hives is perhaps worth relating. We removed them in the evening of one fine April day, and when nearly home the floor-board of one, which was in a particularly rotten condition, gave way, and ten o'clock at night found my wife and self on hands and knees in the middle of the road, capturing the insurprise (as he said) I stepped in and took a handful.

In the first year the five hives previously mentioned more than paid for themselves, and I found that there was a very good market for honey. 1910 was an exceptionally wet season, and there was no increase and no surplus, but I bought four more stocks. In January of 1911 I moved to Little Coggeshall, and having bought another nine stocks from the outgoing tenant, I started in real earnest, and was fortunate enough to obtain the custom of a very large West End dairy, and to this firm alone I sold some £20 worth of honey. Little Coggeshall honey became so well liked that in January, 1912, I sold the same firm nearly £40 worth in one lot. In the spring, however, trouble came in the shape of foul brood, which I discovered

MR. F. E. LENNOX BROWN'S APIARY, LITTLE COGGESHALL, ESSEX.

habitants and restoring the hive to some sort of order.

Our first thought was to join the Essex B.K.A., which we did, and it is to this fact that we attribute much of our success, for we found many friends always willing to help and instruct. I only wish every bee-keeper in the county would join the association, and thus take part in the uplifting of the craft and the destruction of disease.

It was at the Essex Agricultural Show at Harlow in that year that I first met Mr. Wm. Herrod; he was demonstrating before a very large audience, and after driving the bees from a skep, he invited any gentleman who had had no experience to come inside and take up a handful. Naturally no one responded, so thinking I must gain confidence in handling the bees I had just purchased, much to his

during spring cleaning. Having heard good reports of the curative powers of Izal, I used it with apparent benefit, but the disease was not to be destroyed in this way, and showed itself again quite early this year in the loss of no fewer than fifteen stocks. I have, however, saved the majority of my stocks by using Apicure. While we have bee-owners all round us whose apiaries are rotten with disease, I shall continue to use this remedy in all my hives, and shall feel sure that my bees will be free from that dread scourge.

The present season has opened favourably, with an abundance of nectar, and although bees have been somewhat late in commencing work, the honey crop promises to be an exceedingly good one. We are favoured in this district with abundance of fruit, hundreds of acres of

seeds, clover, trefoil, and many other coveted honey sources.

The photograph of the old-fashioned Essex apiary shows five stocks of bees which I bought during the winter and stimulated for swarming, some of these swarmed about the middle of May and threw casts about the end of that month. I have now driven the bees from the butter-boxes, after waiting for the brood to hatch out, and have thus secured three good stocks on frames and a quantity of honey with these boxes; the early swarms are now up in the supers and the casts will also be there in a few days. There are no doubt a good many bee-keepers who have not manipulated in this way and would be well advised to try their hands at it. Of course it is too late to think of doing it this season, it being essential to prepare the stock for the operation early in the year, thus obtaining very early swarms.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

EXPERIENCE WITH "ISLE OF WIGHT" DISEASE.

[8770] I should like to relate my experience with a diseased colony. (I hope Mr. Crawshaw will excuse this definition as it seems most convenient when writing for the Press, and in conversation one can easily add the extra peculiarities of the particular stock in question.) After all, a queenless "stock" is a colony if it contains young bees—the point seems to be, how long will it remain so—and can be made queen-right in less time than it would take to describe the method, if one has other stocks to work on, providing, of course, they are in frame hives, while the skep would hardly rise to such heights as "Modern Queen Rearing." I should like to "shake" with Mr. Crawshaw. I enjoy his criticisms very much, but I prefer his writings upon a worthier object than praising the skep, for practical bee work, at any rate. If it is not "a sealed book," its pages are decidedly blurred, if anything goes wrong. Having a very strong skep, which I purchased because I had lost all my bees again, I was expecting it to swarm, judging from outward appearances. As I had to go away for a few days, I drove the queen and a good proportion of bees, and moved stand and skep away. In about a fortnight the stock was very badly affected with "Isle of Wight" disease. Of course, I was very disappointed, as everything was clean and new. However, I decided to destroy them, as I had done in similar cases, but as there was such a lot of beautiful white brood I hardened my heart and contented myself with changing hives, scrubbing the new hive well with Izal, and giving a dose of "Apicure" and napthaline. The following week the stock was decidedly better, and now I am glad to say it has developed into a medium colony, which I have supered. The skep in the meantime was healthy, but three weeks ago this appeared to go wrong; as they failed to raise a queen I have had to dig the "pages" apart to find out the cause. I cannot say whether the diseased stock will be quite cured yet, but there are no symptoms now. The important part to my mind is, after stirring the bees up well as this treatment does, destroy by fire every bee that is diseased. It is difficult to do this, but it pays, as these bees appear to me to be the most dangerous means of contamination.

I should like to suggest that pollen is a "medium" in winter, as for the last season or two this has been unripe or inferior, and it will not remain wholesome when stored. Again, stocks have been more or less denuded of pollen owing to brood chambers being choked with honey. I gave a diseased stock some pea flour and the bees literally gorged themselves with it.—A. H. Hamshar (Surrey).

FOUL BROOD LEGISLATION IN CANADA.

[8771] Some unknown friend has sent me a copy of the circular which is apparently being sent out in opposition to the British Bee Diseases Bill. In this circular a small part of a paragraph from an article of mine in the *Bee-keepers' Gazette* for April, 1913, is quoted as evidence against bee disease and legislation. I also note there are quotations from Mr. Herschiser, Dr. Phillips, and J. B. Crane, who are all known to me to be strongly in favour of bee disease legislation. It has been said that a half truth is worse than a falsehood, and this can certainly be said of these quotations. I do not remember my exact words in the *Bee-keepers' Gazette*, and have not time to look them up, but can only state that the purpose of my article has been grossly misrepresented. We could no more think of doing without legislation and apiary inspectors in the struggle against foul brood than we could think of doing without policemen in the cities in the struggle

against crime, taking for granted that the inspectors and the policemen are honestly carrying out the purpose of the law, yet neither the disease nor the crime have been eradicated and probably will not be in this age and this generation?—Yours very truly, MORLEY PETTIT, Ontario Agricultural College.

"It is not at all surprising to learn that your article has been made use of in the way you suggest, as it is only by withholding the whole truth and quoting little bits which can be turned to their use that the opposition exists. Although clamorous, the opposition is exceedingly insignificant, and can well be ignored. From what we have seen of your article, there is nothing to suggest any evidence against bee legislation, and it only shows the feebleness of its opponents when they have to resort to such mean tactics. That legislation is bound to come is a foregone conclusion, for the evidence in favour of it is overwhelming, and no Government can afford to allow such an industry as bee-keeping to suffer injury because of a few selfish or misguided individuals whom no amount of evidence of the benefits of legislation will convince.—EDS.]

"I am sorry to hear of this opposition to the Bee Diseases Bill. I cannot understand anyone *who desires to benefit bee-keeping* opposing an honest attempt to deal with foul brood and kindred contagious bee diseases. If the Bill is passed, we should have the help of all the splendid and disinterested scientists who are officials of the Board of Agriculture, and few people know the clever men they have and the vast amount of work done for the farming industry in watching and checking diseases of animals, plants, trees, and seeds, and the advice and help they are always ready to give to farmers who try to improve their cattle, corn, &c. The bee-keepers who oppose must be ignorant of the help we should get, or they must have bees and hives which they are afraid to have inspected. Personally, I shall do all I can for the Bill, as I firmly believe it is no use trying to keep bees unless disease is stamped out in apiaries where they do not understand it. I am sure you agree with this principle, and think you ought to help instead of hinder.—J. B. G."

AN OLD ESSEX APIARY.

BEE DISEASES LEGISLATION.

[8772] We have received a copy of the following letter which has been sent to an opponent of legislation; and, as it throws fresh light on the subject, we are pleased to publish it:—

THERE WAS A REASON.

She drank the fragrance of the rose,
That she held closely to her nose.
Away she cast it; so would you;
She found a bee was drinking, too.

—*Exchange.*

THE NYASA BEE.

(*Continued from page* 58.)

The wax produced by the Nyasa bee fetches a very high price in the European market, £6 10s. to £7 10s. per cwt., and is valued here at 112s. Some 40 tons leave the Protectorate annually, thus our little friends contribute largely to the wealth of the country. Yet hardly any is from domesticated bees, but all from wild ones.

A European bee-keeper here would not expect much profit out of wax for some time, having to give so much in foundation. This, unfortunately, cannot be bought reasonably in Nyasaland, and to import it from England is far too expensive; some that I got from London cost delivered here over 6s. per pound. Having no mould to make the usual foundation, I set about and made smooth foundation. A thick pine board with two handles of wire is thoroughly soaked in warm water, dipped in molten wax that is just near the boiling point of the water on which it floats. It is then lifted out level, allowed to set, and dipped in water, when the sheet will float away from the board. Sheets of one and a half or two ounces are the best, as the wire can be embedded better than with thinner ones, and offering less temptation to the bees to eat holes in it. The bees take to it as well as to imported "Weed" foundation, but they often build the cells irregularly, not in the usual nice rows. But it answers its purpose, and is a cheap and easy makeshift if one keeps only one or two hives. For a larger number one cannot do better than purchase a Rietsche Foundation Press. This has been an unqualified success, and covers its cost, about a guinea, very quickly. It is easy to work and full instructions are given with each press. The bees infinitely prefer the foundation produced by it both to the imported "Weed" foundation and the smooth foundation, as I proved by fixing all three in one frame.

Foundation for sections I bleach in the sun on a native mat, watering the wax frequently to prevent melting. In four to eight days, according to the season, it is ready for the sections. No bee-keeper far away from home should be without such a foundation press, and by making foundation for other bee-keepers he can add to his profits.

Numerous measurements of rows of about 20 cells have shown me that they are not truly regular hexagons. Generally the upper rows are a little larger than the lower. In a downward direction they are generally a little narrower than they would be if quite regular. This is so to a higher degree with the worker cells than with the drone cells. Their actual numbers per square inch are about 64 to 67 for the worker, and close on 37 for the drone cell. I apologise for the clerical error that occurred in my first letter with regard to the number of drone cells per square inch.

If the weight of the worker is assumed to be proportional to that of the diameters of their respective cells, the black bee as the third power of their respective diameters, we get about 5,740 Nyasa bees to the pound against about 4,450 blacks. I weighed 128 worker bees of a swarm that arrived the day before. They worked out at 6,385 per pound. Thus the result may be considered nearly that of swarming Nyasa bees.

In my first letter I omitted to mention that the escutcheon of the worker is bright yellow. This, owing to the dense light-coloured hair, which there is particularly long and abundant, is not noticed in the bee alive or just killed dry. But the point may be of importance when one tries to locate the Nyasa bee among the various varieties. The queens show also a lighter escutcheon, though in a much lesser degree, redish brown it is with most of them. The ordinary Nyasa drone has the escutcheon nearly as dark as the rest of the thorax. When we immerse one in oil the dense hair ceases to obstruct our view to some extent, and we clearly see traces of brownish-yellow markings on the escutcheon, similar to those of the queens, but less pronounced. In those drones mentioned before that have one segment of the abdomen marked yellow, the escutcheon is so distinctly bright that it is visible through the hair without immersion in oil. Only the quite black drones mentioned before, notwithstanding the oil, have not revealed any brighter colouring of the escutcheon. An exception was observed in the drones that had the first and second segment marked yellow, and whose underside was brighter than the ordinary drones also. The underside of the belly of the worker is rather bright in colour also. The inside of the legs of the workers carries dark red hair.

I have explained how the various queens differ in the colour of their abdomens, the extremes being very great. I have mentioned a colony that had quite black (not brown) drones, with black hair, without any lighter marks. I now have a colony that has drones with one yellow stripe on the abdomen, the second segment being almost completely devoid of the usual dark brown.

The colour of the worker is very constant. Very rarely, and only in certain colonies, one comes across an odd worker that is devoid of the yellow bands that make our bee so beautiful. Their abdomens are dark dirty brown, and the seg-

ments indicated with the silver hair bands at the base of each segment.

I have praised the sweetness of the Nyasa bee's temper, and generally, if through any mistake of mine, they get excited, they soon calm down. Yet the other day I experienced an unpleasant exception. It appears that a strange swarm came and attempted to invade one of my hives. The owners started fighting at once, on such a scale that the place near the hive was so covered with corpses that one could not see the ground, and dead bees were strewn all over the compound. They killed all the fowls and ducks, and were a great nuisance generally, so that I was warned by the Town Clerk. And, sadly enough, it took over a week before the apiary had recovered its old peace and good nature. This fight surprised me, as more than once had I seen a swarm enter a hive already occupied without any struggle at all.

I have done my bees a great injustice by doubting their suitability for working sections. The past rainy season earned its name more than several before, and there is more nectar. The honey, instead of being dark, is the colour of champagne, and even more delicious in flavour than the last. And the bees have given me quite a fair number of sections, with beautiful white cappings. I am now doubtful if the importation of an Italian queen can be an improvement in any way.

Hitherto I have only mentioned vagrant swarms, being either washed out by the rains or driven to the vicinity of water by the drought. This April, four of my hives, whose space I had not enlarged early enough, did swarm. Two of them had drawn out the foundation in the sections, but had not stored any honey in them when they swarmed, though the honey flow had not been interrupted. Perhaps one of the Editors or a kind reader can tell me why they did so.

The list of Bee Plants has been enlarged by the following:—

Indigenous Herbs. Name.	from month	to month	
Dinde, a white flowered lily, sweet scented	11-12	12-1	White pollen in the morning.
Sira Imuna, about a month later than the white Sira ..	2	5	With pink flower, covers the bee's abdomen with milky white pollen.
Mpatsala (Yao)	2	5	The Wankonde call it Njusya and use it against eye disease.
Nambamba (name in Chinkonde)(5)	5	6	Labiata, much frequented.
Nakapwesu ..	3	5	Papilionaceae, yellow flower, similar to broom, 4ft. high. Afternoon.
Dendye	4	5	Small white flower near water.
Chilundalunda. Mlongandundu. Chimasongwe. Kalasaweni.	4	5	Labiatae. pale red flower. Forenoon.
Kachisi	1	2	A grass, pollen in morning.
Trees and Bushes.			
Ngwalangwa. Palm	10	11	Evening.
Palangwale, shrub	12	1	
Kobo	12	1	
Msondoka	10	11	
Nkunguzu	4	5	White, bell shaped flowers, in large clusters, spreads on on the ground, white pollen.

IMPORTED. Herbs.			
Euphorbia heterophylla	1	4	ornamental plant, seeds itself
Gaillardia	2	6	require culture to thrive
Dracocephalum	2	4	

It is often difficult to obtain the names of indigenous plants. The native takes little interest in what is of no use to him, and if one presses for a name, he is prone to give any name just to satisfy us.

I was somewhat surprised to find so many technical terms in the various native languages, whilst the Swahili seem to have to use several words to express a bee term. I give the following translations:—

ENGLISH	CHIYAO	CHINYNJA	KISWAHILI
Bees	Njuchi	Njuchi	Nyuchi (also Nyuki)
Swarm	N'nega	Chitadzi	Yumula a nyuki
Comb	Lisega	Chisa	Chanuwo a nuki
Wax	Sera	Sera	Sera
Honey	Uchi	Uchi	Uchi
Pollen	Mbotole	Maluwa	Mauwa
Propolis	Lipula	Pula	Lipula
Hive	Mzinga	Mzinga	Mzinga

They know the existence of drones, but not that of the queen. They think that drones sting. They believe that bees make honey by mixing pollen with water. They do not even hive a swarm, not knowing how harmless bees are in a swarm, but let swarms enter their hives when they like. But very few have hives. The wax is taken in the forests out of holes, and the colonies mostly destroyed with fire. The forty tons of wax which they thus get annually, represent probably a slaughter of 20,000 colonies. How many wild colonies there must be to stand such a destruction?

(*To be continued.*)

Queries and Replies.

[8777] *Transferring Bees.—Remedy for Bee-stings.*—(1) I have found a colony of bees in an old oak tree, which is fairly rotten. It does not appear to be far in, but I cannot see any comb, &c., as the hole is not large enough. Can you please tell me how *you* would go to work if they can be got out? (2) I have a fairly strong lot of bees in a very small hive with fixed frames, which are not made to come out. I wanted to transfer these into a new frame-hive I have, so I set the small hive on the top of eight frames fitted with wired foundation

and a piece of cloth with a 4in. hole in between, they have been like this for about a month, during which time they have drawn out the combs and seem packed with bees. A day or so ago I took the small hive off to see if they had all gone below, but there seems to be just as many in as when I first put it on. There is, as near as I can judge, about 10lbs. of honey. Supposing I were to shake the bees which are now in the smaller hive on to a sheet and let them join the ones which are already on the movable frames, would they be all right without feeding? I saw in last week's "B.B.J." a bee-keeper (R. T., Brooklands) asking for a cure for the swelling caused by bee stings. May I suggest that he try peroxide of hydrogen, obtainable at most chemists. This can be applied almost anywhere without fear of injury, whereas ammonia cannot.—A. H. R., Norfolk.

Reply.—(1) It is impossible for us to say without seeing the tree. (2) You cannot shake the bees from the combs, but must use a Porter bee-escape to get them down. If, in October, the eight combs are well filled with food, there will be sufficient for the winter. When the box is removed the bees should draw out and fill two other combs to make the full complement of ten. They will do this if the weather continues fine.

[8778] *Clipping Queen's Wings.*—I see in the "A.B.C. of Bee Culture" that it is recommended to cut the wings of queens to prevent risk of losing swarms. Will you kindly let me know if you think this course involves any pain to the queen. If not, it seems a very good method for those who, like myself, are away from their hives a good deal, to adopt.—F. W. White.

Reply.—Although it does not involve any pain, as only the tip of the wing is cut off, we do not recommend cutting the queen's wings for several reasons.

[8779] *Hiving Swarm.*—A large swarm issued from one of my hives at 3 p.m. last Friday, and clustered on a young plum tree. The day being very hot, I lost no time in getting them into a skep, and at 7.30 I hived them. I placed the swarm on the old stand, giving them a rack of sections three-parts filled, and removed the parent hive 15ft. away. I visited the swarm at 9.30 (p.m.) and found them all in a dense cluster under porch. I thought this might be due to the sultry weather. Next day, towards afternoon, I noticed a great stir at the parent hive, the bees circling around it. Investigating the cause, I found that the swarm had decamped, and on opening the parent hive I found it so congested with bees that I put on two racks of sections to provide room and ventilation, and also cut out all queen-cells but one. The second day all remained quiet. The third day, after midday, the swarm again issued in great force; the sun was fierce. I brought them down by aid of a syringe, and they clustered on a currant bush near the hive. I had them in the skep in half-an-hour. All seemed secure, but in about an hour's time they issued from the skep, and rising to a great height, they flew over the top of the trees of an adjoining plantation, and were lost. Now, I wish to ask: (1) Why the swarm left in the first instance, as all circumstances indicate that the queen had accompanied them? (2) How does it happen that the swarm found the parent hive when it was removed 15ft. to a fresh site? (3) If I had taken the precaution beforehand of placing a frame of brood and eggs in the hive containing swarm, would the bees have remained, *even supposing the queen to be lost in hiving?* Your reply will be much appreciated by W. R., Berwick.

Reply.—(1) Over-excitement and an old queen was probably the cause; (2) or the queen did not issue, and so was found by the flying bees in the parent hive. (3) Yes.

[8780] *Ownership of Stray Swarms.*—To-day, 12th inst., when watching my father's bees, I noticed a large swarm approaching the garden. They came circling over my head and I started to throw soil among them to bring them down, but, to my surprise, they took possession of a neighbour's empty box, which was left prepared and open not 20 yards from our bees. I was the only person at hand, until the bees began to enter the box, except one old lady, who saw them go past. When the owner of the box came home for dinner, I asked his permission to take them out, but my request was refused. (1) Who has the first claim on the bees? (2) Is it legal to keep prepared decoy boxes standing open where neighbour's bees have easy access?—A. L., Winnigaff.

Reply.—(1) The ownership lies with the person whose hive the bees entered. We take it that the swarm was a stray one, and have answered accordingly. (2) There is nothing to prevent this. Many bee-keepers put out hives with the frames filled with foundation to entice swarms which may issue from their own hives during their absence. This is legitimate, but for a non-beekeeper to do this is certainly not "playing the game."

[8781] *Secretion of Nectar.—Honey-yielding Plants.*—Will you allow me to ask a few more questions for reply in your valuable paper? (1) Can I assume that as long as the clover is blooming nectar is coming in? (2) The weather has been uniformly dull, will that affect the flow? (3) If so, will it recommence with the

advent of sunshine? (4) Could you tell me if the enclosed flower contributes to the harvest? (5) In spring we have a large quantity of May round here, should I get any surplus from that? (6) At this time there is a large quantity of blackberry blossom out, does that yield well? (7) Can you recommend me a book dealing with the chief sources of nectar, their habit at seasons, and possible cultivation? —A. W. Brock.

Reply.—No, it does not follow. There are seasons when the clover secretes very little nectar; there are also odd days when it does not secrete even in a good season. (2) Yes, heavy dews at night with bright sunshine in the daytime give the best conditions for honey secretion. (3) Yes. (4) It is Birdsfoot Trefoil (*L. corniculatus*); both honey and pollen are obtained from it by bees. (5) If you work the stocks up strong enough, and the weather is good you should be able to do so. (6) Yes. (7) We do not know of a book wherein the information you require is condensed. We have seen one excellent note-book extending over a period of fifty years, but have not been able to persuade the compiler and owner to publish it.

Bee Shows to Come.

July 31st to August 4th, at Burnley.—Honey Show of the Royal Lancs. Agricultural Society. Eight open classes for Honey, &c. £30 in prizes. **Entries closed.**

August 6th, at Stoke Park, Guildford.—Annual Exhibition of Bees, Wax, Appliances, &c., will be held by the Surrey B.K.A., in connection with the Guildford and West Surrey Agricultural Association. Nineteen classes (five open to all). Many medals. Schedules from F. B. White, hon. secretary, Marden House, Redhill, Surrey. **Entries close July 26th.**

Aug. 7th, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Three open classes; one for single 1lb. jar of honey (entry free). Schedules from G. Richings, 2, Shrubbery-terrace, Worcester.—**Entries close Aug. 2nd.**

August 7th, at Bruton.—The Annual Show of the Somerset Bee-Keepers' Association, in connection with the Bruton Flower Show. Open classes. Schedules from Mr. R. Litman, South-street, Castle Cary, Somerset. **Entries close August 2nd.**

August 13th, at Wye, near Ashford.—Kent Honey Show, 12th Annual Exhibition. Classes to suit all bee-keepers. Splendid prizes; small entrance fees. One 6 guinea and two 5 guinea challenge cups; also a 2 guinea champion silver cup. A new class this year for six 1lb. of extracted honey, put up in short bottles, or other vessels, suitable for getting honey out of easily, and for sending honey away in. Open to United Kingdom. Two silver medals best exhibits of bee appliances. Twenty-five different classes to enter in. Staging and repairing carried out by experienced men. Prize schedule and entry form free on application to Mr. Alfred Lepper, secretary, Kent Honey Show, Scotton Street, Wye, Kent. Prize schedule and entry form will be sent to all exhibitors of last year without application.

August 19th and 20th, at The Dome, Brighton.—Annual Show of the Sussex Bee-keepers' Association, held in connection with the Brighton, Hove, and Sussex Horticultural Society's Summer Show. Six open classes for honey, including single bottle and section. Schedules from C. A. Overton, Hon. Sec., Beecroft, Crawley, Sussex.—**Entries close August 11th.**

September 3rd, at Lancaster.—Lancaster Agricultural Society. In conjunction with the Lancashire B.K.A. Classes for honey, bee produce. Specials, including two silver challenge cups, two silver and one bronze medals. Write for honey schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 27th.**

September 12th and 13th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes, with liberal prizes for appliances, extracted honey, sections, fitting-up frames, fitting-up sections, judging competition, &c., &c. Schedules from G. Hayes, Mona-street, Beeston.

Sept. 24th and 25th, at Kendal.—The Annual Show of Honey, Wax, and Appliances of the Cumberland and Westmorland B.K.A., in connection with the Northern Counties Fruit Congress, in the Market Hall, Kendal. Eleven open classes. Liberal prizes. Note.—All prize-money will be paid on second day of show. Schedules from G. W. Avery, Wetheral, Carlisle, or Geo. Chatham, Low Green, Staveley, Kendal.

Notices to Correspondents.

Recruit (Woodside).—*Location of Apiary.*—Keep the bees as far from the road as possible; at any rate, no nearer than 25 feet. It is the outcoming bees which sting, those returning are loaded with nectar, and not likely to be irritable. Hives should be no nearer than 6 feet from each other.

J. E. (Aberystwyth).—*Fighting Amongst Bees.*—The fighting is evidently caused by the bees from the swarm trying to go back to the old hive. Three feet is not sufficient distance between hives.

Suspected Disease.

E. J. A. (Market Deeping) and Nemo (Staffs).—We regret to say the bees have "Isle of Wight" disease, and had better be destroyed.

Abbey Craig.—Yes, it is, as you suspect, "Isle of Wight" disease.

Honey Samples.

Cymro (Anglesea).—In No. 1 the aroma, flavour, and density are fair, colour medium. No. 2 is of good flavour and aroma, poor in density, colour light. No. 3 is of rather acid flavour, but of good aroma and density. It also would be classed as a light honey.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ¼*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

STRONG, healthy stocks, ten frames and hive, complete, 22s.—WHEELER, Shamley Green, Surrey. v 74

FEW strong swarms, ready for delivery, guaranteed healthy, free from all disease; full particulars, stamp for reply.—NORTH, Cressing, Braintree, Essex. v 69

NEW Cowan honey extractor, cost 49s., price 36s., packed on rail; also other goods; particulars.—EDWIN GLOSSOP, Ambergate. v 70

DRIVEN BEES WANTED at once, guaranteed healthy, with queen.—Price and particulars to PEARCE, Earlswood, Rectory-road, Little Thurrock, Grays, Essex. v 72

QUEENS.—1913 English black fertiles, 3s. 6d.; virgins, 2s.—ROPER, Thorpe-on-the-Hill, Lincoln. v 71

WANTED, good extractor and other appliances; exchange poultry.—W. BALDWIN, Springfield, Acton. v 75

SECTIONS WANTED, full and clean; quote price carriage paid.—FROWD'S DAIRIES, Eastbourne. v 76

SUFFOLK, Sudbury.—8-roomed double cottage, with 1¼ acres, rent £16 p.a. inclusive. Further ½ acre may be leased at £2 p.a. Semi-intensive fowl shed, incubators, brooders, &c., &c., and cramming shed to hold 200 birds. Present stock about 180 head, including number of first-class strain White Leghorns. Twenty-six stocks bees, in W.B.C. hives, spare hives, complete up-to-date appliances, and good stock honey. Magnificent bee district. Excellent goodwill. Stock to be taken over by incoming tenant. Price £250.—Box No. X., apply, "Bee Journal," 23, Bedford-street, Strand, W.C.

SECONDHAND EXTRACTOR, 4 cages, sound and good, 10s. 6d.—REV. JARVIS, Harnbrook, Bristol. v 87

SECTIONS WANTED.—One gross, well filled clover honey; immediately.—Send lowest price to ELLIOT, Old Rectory, Southwell, Notts. v 86

WANTED, healthy driven bees, August and September, delivery boxes found.—AVERY, Deverill, Warminster. v 84

EXCHANGE, billiard table, 45in. by 45in. balls, cues, for healthy bees.—ELVIDGE, 110, Welholme-road, Grimsby. v 82

FINEST LIGHT HONEY, in 28lb. tins, 7d. lb.—WAIN, Thorpe Bank, Wainfleet. v 81

FOR SALE, five strong, heavy stocks of bees, in straw skeps, 12s. 6d. each; disease unknown, overstocked.—THEOBALD, West Ilsley, Newbury, Berks. v 89

WANTED, holiday tuition with bee-keeper, as paying guest. — TOPHAM, Ockbrook, Derby. v 79

SURPLUS 1913 QUEENS.—Sladen's Carniolian hybrids, 5s. 6d.; blacks, 4s.; orders rotation.—WHEATLEY, Spa, Hinckley. v 78

WANTED, any quantity good sections honey; state price.—BOWDEN, Broomhill, Witley, Surrey. v 77

GEARED tin extractor, also large ripener and strainer, nearly new.—BECKENSALL, Ringwood. v 62

STRONG, healthy nuclei, on six frames, with four frames of brood and 1913 prolific laying queens, 15s. each; a few stocks for disposal, on ten frames brood with 1912 queens, 30s. each, guaranteed healthy, no disease of any kind in the district.—A. SHARP, Halstead Farm, Barrowford, Lancashire. v 56

ABBOTT'S latest W.B.C. 27s. hive, new and unused; also Lee's W.B.C. hive, with many appliances, in good order; best offers.—120, Cranbrook-road, Chiswick. v 51

3 STOCKS BEES, young, vigorous queens, healthy, packed free, 25s.—BERNARD SKINNER, Dereham, Norfolk. v 50

DRIVEN BEES WANTED August 1st, guaranteed healthy.—W. TOMLINSON, Crimicarlane, Fulwood, Sheffield. v 49

WANTED to purchase, secondhand Root-German wax extractor; send particulars.—HILLMAN, Stonehouse, Glos.

WANTED, FIRST GRADE SECTIONS and light Honey in bulk, Prompt Cash.—COOK, Torwood, Ashford, Middlesex.

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

SECTIONS WANTED, glassed or unglassed, by HONIELADE CO., 23-25, Moorfields, London, E.C.

BOWEN'S "Model" cases, delight everyone, perfect fit, 9s. 6d. gross; dozen, 1s. 2d.—CORONATION, Cheltenham.

NIL DESPERANDUM.—Send 1s. 6d. bottle successful "I.O.W." cure; many testimonials.—BOWEN, Coronation, Cheltenham.

WANTED, ten to twenty gross high class new English Honey, in sections.—Quote price, with sample, to W. J. HALL, Cheadle Hulme, Manchester.

WANTED to purchase, one or two tons new English honey; quote lowest in bulk, or in tins; free with sample.—CHARLES C. WILLIAMS, LTD., 281, Broad-street, Birmingham. v 73

HEALTHY DRIVEN BEES, with queens, until August 10th, 5s. per lot; after, 4s. 6d.; boxes returnable; orders in rotation; cash with order.—T. PULLEN, Ramsbury, Hungerford. v 86

PURE, selected fertile Italian queens, 3s. 6d. each, post free.—AVERY, Deverell, Warminster. v 85

HEALTHY STOCK, sale, on ten frames, 25s.—23, Douglas-road, Handsworth, Birmingham. v 80

HEALTHY DRIVEN BEES, August delivery, 6s. 6d. per lot, safe delivery; fertile queens, 3s. each.—BRADFORD, Tibberton, Droitwich. v 90

NOW IS THE BEST TIME to requeen by Snelgrove's method. Easy, reliable, profitable. 6½d.—SNELGROVE, Albert Quadrant, Weston-super-Mare; or "B.B.J." Office, 23, Bedford-street, Strand W.C. v 91

1913.—PURE imported Golden Italian fertile queens, guaranteed healthy, vigorous, prolific, 4s.; specially selected, 7s. 6d. each, prompt despatch.—J. B. GOODARE, Woden Apiary, Wednesfield, Wolverhampton. v 93

FOR SALE, complete hives of bees, golden colour, with frames and sections.—BARKER, 23, Bolton-road, Grove Park, Chiswick. v 68

SECTIONS WANTED, any quantity, cash; also extracted.—F. W. WEITZEL, 21, Lonsdale-road, Kilburn, N.W.

RE-QUEEN NOW, with splendid strain hybrids, very quiet, very prolific, 5s. each.—ADAMS, Tilford, Heathhurst-road, Sanderstead.

NOW is the time to re-queen in order to produce young bees to strengthen stocks for winter.—Choice fertile tested English queens, excellent strain, safe arrival guaranteed; send for catalogue of up-to-date bee appliances. Winner of the first prize at Royal Shows, 1910, 1911, and 1912.—WILKES, Lichfield-road, Four Oaks, Birmingham.

Editorial, Notices, &c.

LINCOLNSHIRE B.K.A.

County Show.—The Annual Show of honey, hives, appliances, &c., in connection with the Lincolnshire Agricultural Society, was held at Lincoln on July 17th and 18th. This department was under the management of the Lincs. B.K.A.

There was a good entry, and the honey exhibits were of excellent quality. The judges were Dr. Percy Sharp, Mr. J. Emerson, and Mr. George Hayes (Notts.).

The following were the awards:—

Trophy.—1st, T. W. Swabey, Bracebridge Heath; 2nd, J. H. Hadfield, Alford.

Sections (Open).—1st, W. Patchett, Cabourne; 2nd, T. W. Swabey; 3rd, H. Willcox, Spalding; 4th, Miss A. M. Morley, Temple Bruer.

Extracted Honey (Open).—1st, Mrs. G. Pilkinton, Brauncewell Grange; 2nd, Rev. W. Towers, South Thoresby; 3rd, A. Herring, Brauncewell Lodge; 4th, W. Patchett.

Sections (County).—1st, T. W. Swabey; 2nd, W. Patchett; 3rd, H. Willcox; 4th, Rev. C. H. Murray, Partney.

Extracted Honey (County).—1st, Rev. C. H. Marshall, Lincoln; 2nd, W. Patchett; 3rd, David Seamer, Grimsby; 4th, Mrs. Pilkinton.

Extracted Honey, other than Light.—1st, W. B. Allister, Throckenholt; 2nd, J. H. Hadfield; 3rd, T. W. Swabey.

Extracted Honey (Novices).—1st, W. Parsons, Branston; 2nd, Miss N. Reid, Caythorpe Hall; 3rd, J. Denman, Northorpe.

Granulated Honey.—1st, C. H. Marshall; 2nd, B. Selby, Blyton; 3rd, T. W. Swabey.

Cottagers' Class.—1st, T. R. Catchpole, Stickford; 2nd, W. B. Allister, Throckenholt.

Bees-wax.—1st, J. Balderstone, Authorpe; 2nd, T. R. Catchpole; 3rd, F. W. Frusher, Crowland.

Observatory Hive.—1st, H. Roper, Thorpe-on-the-Hill; 2nd, J. H. Hadfield; 3rd, T. W. Swabey.

Collection of Appliances.—1st, Jas. Lee and Son, Ltd., Uxbridge; 2nd, W. P. Meadows, Syston.

Hive for General Use, price not to exceed 25s.—1st, Jas. Lee and Son, Ltd., Uxbridge; 2nd, W. P. Meadows, Syston.

Cottager's Hive, price not to exceed 12s. 6d.—1st, W. P. Meadows; 2nd, Jas. Lee and Son, Ltd.

Any appliance connected with Bee-keeping recently introduced, or exhibit of interesting practical or scientific nature. 1st, W. P. Meadows; 2nd, T. W. Swabey.

Practical demonstrations and lectures were given in the Bee tent each day, by Dr. P. Sharp and J. H. Hadfield, and the attendances at these were most gratifying. The duties of Steward were ably carried out by Messrs. J. S. Baldry and J. Ratcliffe.

YORKSHIRE B.K.A.

The annual show of hives, honey, and wax, in connection with the Yorkshire Agricultural Society's show, was held at York on July 23rd, 24th, and 25th. The exhibits in the open classes were below the average, but in the county classes there were record entries, and a very fine collection of honey was staged. During each day, the Rev. H. T. Hutchinson lectured and demonstrated in the Bee tent to large and appreciative audiences. Mr. F. Boyes, of Beverley, judged, and made the following awards:—

Class 119.—*Complete Frame-hive, the selling price above* 12*s.* 6*d.*—1st, W. Dixon, 27, Central Road, Leeds; 2nd, W. Dixon.

Class 120.—*Complete Frame-hive, the selling price not to exceed* 12*s.* 6*d.*—1st, W. Dixon.

Class 121.—*Twelve Sections Heather Honey.*—1st, W. Dixon.

Class 122.—*Twelve Sections Honey, other than Heather.*—1st, J. Pearman, Penny Long Lane, Derby; 2nd, W. Dixon; 3rd, J. G. Nicholson, The Apiary, Llangwathby, Cumberland.

Class 123.—*Twelve* 1-*lb. Jars Extracted Heather Honey.*—1st, J. Pearman; 2nd, J. Berry, The Apiary, Llanrwst, North Wales; 3rd, W. Dixon.

Class 124.—*Twelve* 1-*lb. Jars Extracted Honey, other than Heather.*—1st, W. S. Halford, West Wratting Lodge, Cambridgeshire; 2nd, W. Dixon; 3rd, J. Pearman.

Class 125.—*Twelve* 1-*lb. Jars Granulated Honey.*—1st, W. Dixon; 2nd, J. Pearman.

Class 126.—*Best Exhibit of not less than* 3-*lb. Wax, Produced by Exhibitors' Own Bees.*—1st, J. Pearman; 2nd, J. Berry; h.c., W. S. Halford.

Class 127.—*Six Sections of Honey.*—1st, and bronze medal, G. Garbutt, Ingleby Barwick, Thornaby-on-Tees; 2nd, J. C. Hall, California, Howden; 3rd, Rev. H. T. Hutchinson, Sancton Vicarage, Yorkshire; reserve, T. Evers, Sand Hutton, York; h.c., P. M. Ralph, Bank Buildings, Settle.

Class 128.—*Six* 1-*lb. Jars Extracted Honey.*—1st and silver medal, P. M. Ralph; 2nd and certificate, G. Garbutt; 3rd, R. Bellerby, Askham Bryan, York; h.c., J. C. Hall; c., F. A. Bean, Snaith, Yorkshire

Class 129.—*Six* 1-*lb. Jars Granulated Honey.*—J. C. Hall; 2nd, J. H. Oldfield, West View, Laughton, Rotherham; 3rd, F. A. Bean; h.c., G. Garbutt.

SOUTH STAFFORDSHIRE AND DISTRICT B.K.A.

On Saturday, July 19th, the members of the South Staffordshire and District B.K.A. met at Hagley Park, the private grounds of the President, Viscount Cobham.

Mr. Dixon, the head gardener (a bee-keeper of over thirty years standing), invited the party to view his apiary. He explanied that although "Isle of Wight" disease had cleared him out last autumn, yet his enthusiasm had prompted him to procure more stock. He had purchased some bees in a skep in the spring and had kept these for increase, having now four nice stocks.

We hope that he has seen the last of bee diseases.

After a walk through the Park the party assembled for tea at the Lyttleton Arms. From the conversation that passed it was evident many were gaining knowledge which will come in useful to them when difficulties arise. It was interesting to note that the party were all close residents to towns, and some are quite successful bee-keepers although they reside among the smoky chimney stacks of the Black Country.

The next gathering will take place early in August, at Dudley Castle Mill Farm.—Joseph Price, Hon. Sec.

ASSOCIATIONS AND THEIR WORK.

We have just received from the Secretary of the Cheshire Bee-keepers' Association a very neat pamphlet entitled, "On the Keeping of Bees," by Percy Hind, Esq., the Vice-Chairman of that Association. It is very concise and useful, and is intended for free distribution amongst the members, but sold to outsiders for the small sum of one penny, to prevent, as the Secretary very rightly puts it, "waste."

We understand this is only the first of a series of publications to be made by the Association.

Considering that a very few years ago the Cheshire Association was practically dead, it is very gratifying to find that, mainly through the strenuous efforts of the Hon. Secretary, Mr. E. W. Franklin, who was appointed, as it were, captain of a sinking ship, the Cheshire Association is gradually forging ahead, and likely soon to be one of the first in Great Britain. We have personal experience of Mr. Franklin's energy and ability, and under his capable management prophesy a bright future for the C.B.K.A.

HOMES OF THE HONEY BEE

AND APIARIES OF OUR READERS.

We publish below a letter received from our old friend, Mr. W. J. Sheppard, who for many years was the Hon. Sec. of the Essex Bee-keepers' Association, and also a member of the Council of the B.B.K.A.

He is now living in British Columbia, and we are sure that his many friends will be pleased to hear from him and also to see his apiary in the new country. He rendered yeoman service to the craft in the county of Essex, and was also a faithful stalwart of the parent Association; even now he takes great interest in the doing of the bee-keepers and associations in the old country. We hope shortly to print the Foul Brood Act of British Columbia, as an object lesson to show how new countries protect their small but important industries, and it will be seen that for the benefit of the community they even go so far as to impose imprisonment for flagrant breaches of the law with regard to bee diseases:—

Dear Mr. Herrod,—I am sending you herewith photographs, taken by my son, of my small apiary of five hives at Nelson, British Columbia.

I am only experimenting in bee-keeping here at present, as I want to satisfy myself, before branching out further, whether this is a good locality for honey production. It certainly ought to be, as there are hundreds of acres of white clover in full bloom all around, besides willow herb (fire-weed) and milk-weed in large quantities. The great drawback, however, is the excessive wet weather and low temperature we have experienced all through the month of June, and which seems likely to continue for some time yet. The same weather conditions prevailed last year.

You will notice that I am using American pattern hives, as manufactured by the Ham and Nott Company of Brantford, Ontario. These hives contain ten Langstroth brood frames, and as far as I can judge at present, do not provide a sufficiently large brood-nest for the Ligurians (this being the only variety kept in this Province), as I have had swarms in

abundance, which I have mostly returned. What I intend to try next season is to let the queens have access to twenty Langstroth frames. I am working shallow frames in the supers with drone foundation.

You will be glad to know, as far as I have been able to ascertain, that this Province is quite free from any bee diseases, and I hope it will continue to remain so. Mr. L. Harris, late of High Wycombe, Bucks, is the Government Inspector for this district, under the Provincial Foul Brood Act of 1911, copy of which is contained in booklet herewith. Mr. Harris paid me a visit about a month ago, and we had a very pleasant time together. He resides at Vernon, in the Okanagan District, where he has about 100 colonies, and gets good results.

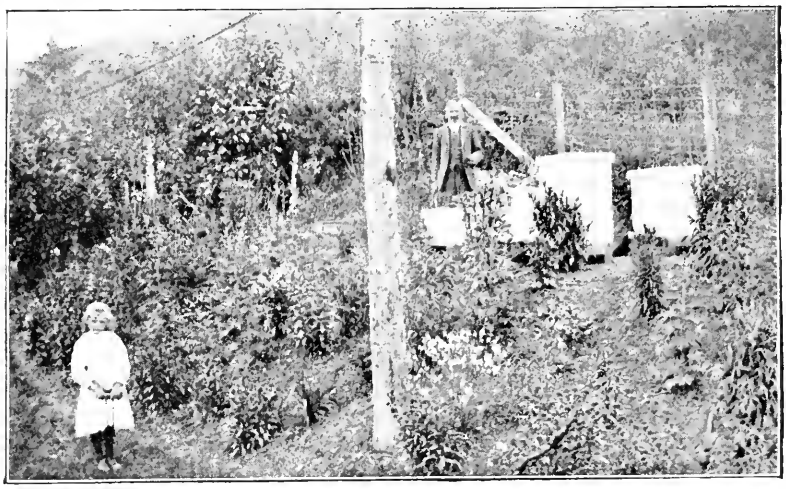
I like the roofs of my hives very much. As you will observe, they are flat, and therefore very useful for resting things on. They are packed with about an inch and a half of sawdust or fine shavings, so that they are very warm, and loose quilts are not required at all, which is a great consideration. A sheet of tin covers the top and makes them quite water-tight. I am using the Root metal-spacers for the Langstroth frames, and much prefer these to the wide shoulders of the Hoffmann frame, as the bees gather a good deal of propolis in this district from the many varieties of the pine trees, which abound everywhere.

You will notice that my garden contains a goodly assortment of herbaceous plants, these having been sent me from the old country, and the flowers are daily visited by humming birds, which are quite common here during the summer months, and are very beautiful. In the autumn they migrate to California.

With kindest regards to yourself and all old friends, I remain, yours very sincerely,
W. J. SHEPPARD.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.



MR. SHEPPARD'S APIARY, NELSON, BRITISH COLUMBIA.

BLURTS FROM A SCRATCHY PEN.

[8773] I always look forward to our meeting at the "Royal" for several reasons. First, at the Council meeting we get other faces than those we so regularly see at Bedford Street; secondly, from its indications you can "gauge" something of the position of the Association; thirdly (and this is a great attraction), the holiday of a bohemian life for three days with friends Richard Brown, "Dicky," as a cook, Joseph Herrod as caterer, and just a canvass bedstead to sleep on. Needless to say, under these circumstances, were it not for the inevitable fire of jokes and the good tales that are circling round, the sleep god is not difficult to be wooed.

And now as to my first point, the other faces we see. I am quite sure, and I know

I cannot be contradicted, that all members of the Council who are able to attend the London meeting would be glad to see their country cousins more frequently. The Metropolis is the great centre to which all that is pre-eminent seems to gravitate. Yet the whole of wisdom is not centred in it, and I am quite sure the services are lost of many who could and would be useful. Of course, it is a question of expense, and this cuts both ways. It would be equally as expensive for London members to visit the country as it is for country members to visit London, so that until we get some solution of this difficulty I do not see how it is coming off. At present it is to be hoped they will attend whenever possible.

Taken with previous Royal Shows, I suppose the present exhibition was of about the average, possibly a little above, but taken as a thermometer of the advancement of bee-keeping it was distinctly encouraging. The inquiries as to the why and the wherefore of all that concerns our craft, and as to how to commence, were more numerous and real.

It is quite evident that more people are annually getting interested. It is getting to be understood that there *is* something in bee-keeping, if reasonable attention is given.

The questions one asked: What has the B.B.K.A. done for bee-keeping? Of course, the questioner was a novice, or it would not have been asked, but the reply at once came to my mind, and it was in the words of the inscription to Sir C. Wren (who, by the way, was a bee-keeper) "*Si monumentum requiris, circumspice.*" "If you need a monument look around." There, surrounding about, was an object lesson, which only the most bigoted or the blind from sheer wilfulness or obstinacy could call in question. Thirty-nine years ago bee-keeping was in almost as primæval a stage as it was when Saxon and Norman ruled our land. The homes of the bees and the means of gathering their honey were almost the same, and of its life history we knew but very little. Now, here in front of me, were displays of the most advanced and systematic means of apiculture, well thought out; and well executed machinery and appliances to save, on the one hand the bees much time, trouble, and waste, and on the other hand to save the apiarian his time and trouble, and to enable him to offer honey clear and light and bright, as in hundreds of samples before me, or at choice to present it as a delicious *bonne bouche* in the comb. Nor is this all, the intelligence first announced in this country has spread all over our colonies, and to other countries. Yet midst all these we still are pre-eminent. But perhaps the greatest merit to the B.B.K.A. still remains unsaid. During these thirty-nine years the work has been absolutely voluntary. Each member of the Council of each succeeding year has given his time and his trouble and his business knowledge free and unpaid. Is it still asked what they have done? Look around!

But in the path of progress it is impossible to stay foot. There are still fresh difficulties to overcome. The Board of Agriculture has given help. It is logical to assume that this authority has found out that the B.B.K.A. is the only power capable of efficiently dealing with such aid. The fiery cross has to be carried yet to those corners where it has never yet travelled.

Something must be done to grapple with bee diseases. The position of those who oppose legislation is illogical. Do bees suffer from contagious diseases, or do they not? A very plain question. We all know they do. If contagion is rampant among men, he must either be a crank or insane, synonymous terms in this instance, who would prevent the powers that be taking the needful drastic measures. Diseases of animals or insects are on the same plank. There is no escape from this position, and there is one probability, almost a certainty, namely, that those who do oppose legislation, while nominally posing as champions of freedom and such nonsense, really have some concealed and therefore suspicious reason. They are fearful that they may be compelled to adopt sanitary measures in their own household.—J. Smallwood.

WEATHER REPORT.

Westbourne, Sussex.

June, 1913.

Rainfall, ·66 in.	Minimum on grass, 31 on 9th.
Below average, 1·52 in.	Frosty nights, 0.
Heaviest fall, ·16 on 6th.	Mean maximum, 64·9.
Rain fell on 11 days.	Mean minimum, 49·2.
Sunshine, 225·3 hrs.	Mean temperature, 57·0.
Below aver., 9·3 hrs.	Below average, 0·3.
Brightest day, 29th. 14·8 hrs.	Maximum barometer, 30·397 on 29th.
Sunless days, 0.	Minimum barometer, 29·743 on 10th.
Maximum temperature. 81 on 29th.	
Minimum temperature, 38 on 9th.	

L. B. Birkett.

A CURIOUS OLD OBSERVATORY HIVE.

[8774] I am enclosing a copy of an old family document, which came into my possession a short time ago. It is dated 1811. I have had permission to copy same, previous to its being destroyed. I noticed the paper it was written on was dated 1804. As I have seen no records as to when Mr. Lover lived, I can only give it to you as I have it.—E. B. B.

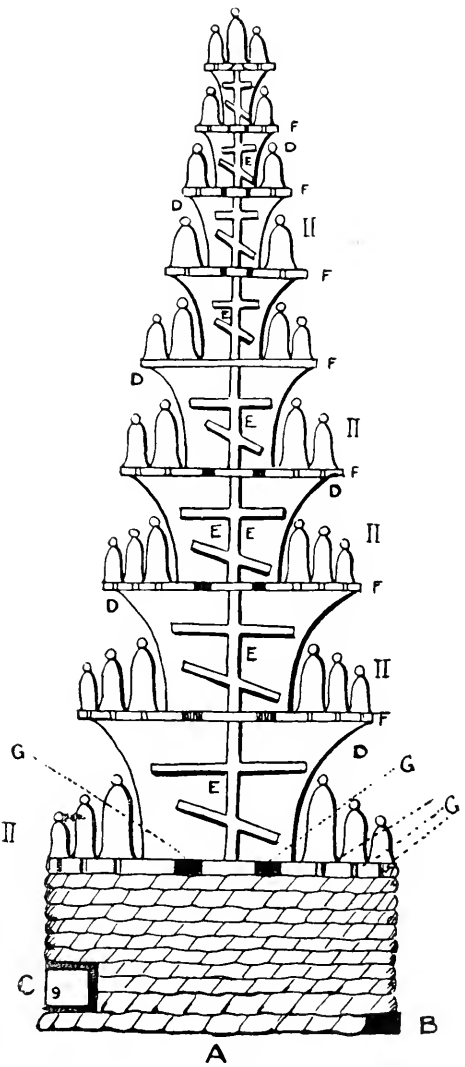
HINTS FOR PROMOTING A BEE SOCIETY.

Columbarian societies have been formed, for the improvement of beauty rather than the utility of the pigeon. Of still lefs use are societies for fancy birds, flowers and other trivial objects, which have been long established; whilst the bee whose industry is proverbial, is left without due patronage; and from neglect, the stocks are annually diminishing, but with our present agricultural improvements, and increasing horticulture it may be presumed that a bee society will not be deemed the least important institution of the present period.

After the establishment of such a society premiums might be offered for afsertaining the food most suitable to the bee, the best mode of taking the honey as well as constructing the hive and preserving its denizens.

Where ornament and pleasure have been studied neat mahogany, and glafs hives have been constructed in the windows of dwelling houses; by which means company in a sitting room may see into the glafs hive and be amused by the activity and labour of the industrious community every moment of the day and learn a lefson of employing their own moments to the most useful purposes.

Some bee hives are so constructed with glafs of various sizes as to represent a pyramid; which, at the same time, are highly productive. This is done by placing over the body of the hive which is of glafs a flat round board perforated neatly round the edges with holes sufficiently large to admit the bees readily to pafs and repafs, over each hole a small glafs, like a cupola, is inverted and as soon as the body of the hive is filled, the bee continues her labours upwards, till every glafs cupola is richly stored with wax and honey. Over these another flat board perforated in the same manner, and furnished with glafses is placed and even other strata lefsening in diameter may be so added as to represent a beautiful and lofty pyramid, a drawing of one as it now really exists in Mr. Lover's bedchamber is here annexed. In this pyramidal form of raising the hive the bees continue to work without swarming or leaving the hive, till the glafs cupolas are filled with wax and honey, and their stay may be prolonged by removing the glafses as soon as filled and substituting empty ones, these glafses may be made of such a size as to suit a family. To breakfast each of which may be daily introduced to the table fresh from the hive.



MR. LOVER'S HIVE.

A little honey on bread would save the use of butter on the occasion, and would be more wholesome, it is at the same time a luxury that every family in pofsefsion of a garden may command without expense and certainly with the addition of rational amusements. To unite this with profit is the intention of these hints which experience will improve upon, and amply reward the proprietor of this most industrious community of labourers, who seek no reward in return but house and

shelter from the inclemency of the seasons.

Explanation of the Plate. Exhibiting the plan of Lover's colony of bees:—

A. The straw bee hive inclosing a large glafs D.

B. The mouth or entrance of the bee hive.

C. The door behind the hive which opens to admit a view of the bees and internal structure of the honey combs.

D. Large glafses placed on the hive which may be continued to any elevation, by the intervention of the flat circular board.

E. Crofs sticks placed in the hive and within each of the large glafses D.D. for the bees to fasten the combs upon.

F. Flat circular boards one of which is placed over each of the large glafses D. and perforated to admit a bee pafsage for bees. The large holes G. are included in a large glafs D. In the circular boards are smaller holes covered by smaller glafses each inverted resembling cupolas I.I. of different sizes at the pleasure of the proprietor.

These cupolas in the original colony surrounded the large glafses D. but are ommitted in the engraving in the front of each in order to exhibit these large glafses more obviously with the crofs sticks E. included within them hence the strata of glafses above the straw hive appear as a section. Finis.

AVOIDING DISEASE.

[8775] I noticed an article in the "B.B.J." of the 17th inst. number (8762), page 283, by Herbert Mace, which I strongly confirm, especially the last sentence of the chapter, and being an old bee-keeper, having met with many ups and downs in the craft, I should like, by your kind permission, to say a few words to some of the novices who read the JOURNAL, that they need not fear foul brood or the "Isle of Wight" disease, if they will only take the time and trouble to follow some of the sound advice given in the "B.B.J." and "Guide Book." Of course, if they do not, they are classed with the many undesirable bee-keepers, and become a source of trouble to others through their own neglect. Now, I wish to relate what occurred to me this year: a man came to me in May and asked me to take a swarm out of his garden. I did so, and took them home and hived them on six drawn-out clean combs. In about two weeks I found they had got "Isle of Wight" disease—thousands crawling about unable to fly and congregating in little heaps to die. Without any delay I got a clean hive and put all that remained, with the queen and brood into this apparently clean hive, but I first disinfected it with a weak solution of Izal, and left it damp. I also put the quilt into it that covers the frames, and put that on damp. There being a fine lot of brood and stores in the combs, I placed those combs containing most stores with brood on the outside, and put another clean drawn-out comb in the centre, and then fed with syrup, medicated as per instructions given in the "Guide Book." I also added three drops of Izal to each pound of syrup. Result, a complete cure. About three weeks after I took out a frame of brood with the queen and bees, also another frame of stores from the outside, with bees, and put them in an observatory hive, and many of my friends have seen them. Queens are now being reared in the old hive, from which I took the queen, for testing purposes. I will not trespass any further on your valuable space, but, in conclusion, I say: Novices take advice, that thoroughness is the secret of success in everything. Give them attention, combined with commonsense; otherwise give up the craft altogether. Wishing every success to those who take it up in earnestness and thanking you.—G. B. WILLETT.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Effects of Shelter.—"A sudden cold spell with a north wind stopped all bees working at all yards but one situated on the sheltered side of a steep hill. Here the bees were working normally and with a chilly wind blowing, they were in a perfect roar. They would circle around and start off, and when once started would go on to the fields." Even with hives in the same apiary this is noticeable. Those in the sheltered corners fly out actively when the more exposed ones do no more than look out at the entrance, and then return to warmer quarters.

Checking Swarming.—A recent issue of *Gleanings* had the following paragraph on swarm-prevention, which, I think, contains at least the germ of a great truth well worth investigating—"As soon in spring as the bees begin to build up, I go over them, and when they have brood in four frames or more, I reverse the order of the brood frames, placing those with the least brood in the centre, and those with the most brood outside of the brood-nest, just as if we were to split an apple open and reverse the splits. I do this every ten days until the brood-chamber is full of brood, excepting the outside combs, which should contain pollen and honey. Then I remove the queen with two frames of sealed brood, and start a nucleus with her. Twenty-four hours later I give the parent hive a ripe queen-cell, so that in ten days or so there is a vigorous young queen lay-

ing in the hive, and all inclination to swarm is over for that flow." There are three good points in this plan worth noting. There is no "jumping" of frames. There is a short interregnum when no eggs are laid, and while there is likely to be no swarming there is increase.

A Guide to Us.—*Gleanings* announces that during the last three or four months eight different States have passed foul brood laws. "Altogether, legislation is advancing at a rapid rate in the United States, and we now have *thirty-three* States having foul brood laws. In most of the States the spread of disease has been checked. In many others there is a decided decrease in brood diseases." A point worth emphasising is that in all the American bee papers I receive I never yet met with a single word of protest from any bee-keepers against the passage of any of these Acts. Another point worth printing in big, big letters is that the *bigger* the bee-keeper over there, the keener he is for legislation. Remember they have *really* "*big*" apiarists. One of them could swallow the half-dozen *big* protestors we have here, and another half-dozen with them, even at their own estimate of the number of stocks. An argument some of our antagonists use is that legislation has not eradicated disease in the States. I grant this—but why? The appropriations (*i.e.*, cash set apart) have been too small for the vast area of ground to be covered; and, secondly, there was no thorough compulsory power to back up the work of inspection. In the newer laws these faults have been remedied. Then it must be remembered that, say, Michigan contains more square miles (56,000) than England (51,000), and the facilities for inspecting are fifty to one at home to what they are over the greater part of, say, such a state as Mexico, with its 750,000 square miles.

Michigan Foul Brood Bill.—Clause V. is far more stringent than anything in our Bill. It reads as follows: "For the enforcement of this Act the State inspector of apiaries shall have access, ingress, and egress to and from all apiaries or places where bees, combs, or apiary appliances are kept; and any persons who shall resist, impede, or hinder in any way, the inspector of apiaries in the discharge of his duties under the provisions of this Act, shall be punished by a fine of not less than ten dollars nor more than fifty dollars and costs of the prosecution, or be imprisoned in the county jail not less than ten days nor more than thirty days, *or both* at the discretion of the judge."

Clause II. enacts—"That if the colonies in question seem to be in such bad condition that treatment is not likely to be successful, or if it seems to the inspector that the chances of obtaining a cure are remote, and of this the inspector shall be *the sole judge*, it shall be the duty of the inspector to destroy said colonies by fire or burying, or by both, *without recompense* to the owner, lessee, or caretaker of said bees. He may also inspect apiaries in localities not reported, in endeavouring to locate new areas of infection."

A thousand colony bee-keeper, commenting on this new Bill, says: "It is without doubt the best disease law Michigan ever had"; and another gives *all the credit to the larger bee-keepers*, who fought manfully until they brought about the passage of this drastic measure.

Non-painted Hives.—"Apart from the economic side of the preservation of hives, an unpainted hive assumes a greyish hue, a colour that becomes very nearly black. Such hives out in the sun will often drive the bees out of them and stop honey-gathering altogether. Place the hand on a hot day with the temperature between 95degs. and 100degs. in the shade, and the white painted ones will be merely warm on the surface, while the dark hives will be so hot as to blister the hand. Colonies of the same strength will be contentedly working in the hives painted white, but clustered out badly in front of the dark ones." If the hive is shaded the bees will not fly out so early in the morning, and they will stop work earlier in the evening. Dr. Miller admits all the foregoing, but thinks he has an advantage with his unpainted hives in the winter welfare of his bees. Before he becomes a centenarian we will have him painting his hives in spite of "Do (o) little"!

Extraordinary Yields.—The following may interest not only Mr. Crawshaw but readers in general; it comes from Victoria, Australia. "The returns from my two best colonies are as follows:—824lbs. and 807lbs. Has any bee-keeper done better?" The editor replies, "I know a larger *average* and a larger record in New South Wales." This was gathered in what would be our mid-winter, which shows forcibly that dates differ as one travels south. I don't care to remind readers of this fact, preferring to leave it to their own intelligence. Readers are the better of doing a little thinking! Don't you think so, "L. S. C."?

Red Clover Bees.—"When we are asked whether we will guarantee that one strain will work on red clover, we always reply in the negative. All we can honestly say is that they will work on red clover if any strain will; and even then only when conditions are favourable." That is fair and honest. The "red clover tongue" is a myth.

Preserves.—"Strawberries preserved in honey are about as fine eating as I ever

expect to get in this life. As to the keeping qualities, we have them of various ages —two and three years old, and none spoil." Other fruits can be preserved, using honey instead of sugar.

Queries and Replies.

[8782] *Lazy Bees.*—In the early spring I had four hives of bees; after examining them I came to the conclusion three should be made into one by uniting. This I did, making a good, not first-class, hive of ten combs of bees. They have gone on all the summer, but have not collected a tablespoonful of honey. A week ago I opened out the centre of the brood chamber by removing two frames, one each from the outsides, and inserted two frames of foundation. Last night I examined them, and found the queen had laid eggs, and the brood was sealed on the four outsides that had been drawn out. Can you give me any explanation of their laziness? Is it too late in the season to kill queens, and let the stock raise another?—J. C., Ham Street.

REPLY.—The fault evidently lies with the queen, which is either an old or indifferent one. It would be best to buy a queen from a reliable dealer, and requeen as soon as possible. To kill the queen and let the bees rear another one is a very haphazard way of working, and not at all satisfactory, as no selection is carried out.

[8783] *Starting Bee-keeping.*—Can you enlighten me a little on the following subject? I have collected into a box a nest of honey bees, including the queen, and they are now working in the hive. Is it possible for these bees to work in sections next season if all is well? Also where could I get details for making a wooden hive, as I could make it myself, being in the trade? Thanking you in anticipation—X. Y. Z., Newark House.

REPLY.—You do not state what kind of honey bees you have collected into the box, therefore it is impossible for us to say if it will be possible to get them to work in sections. If it is a nest of wild bees, which we rather suspect, from your query, they will be of no use. Working drawings for making a bee-hive are given in "The Bee-keepers' Practical Note Book," post free from this office for 1s. 1d.

Bee Shows to Come.

July 31st to August 4th, at Burnley.—Honey Show of the Royal Lancs. Agricultural Society. Eight open classes for Honey, &c. £30 in prizes. **Entries closed.**

August 6th, at Stoke Park, Guildford.—Annual Exhibition of Bees, Wax, Appliances, &c., will be held by the Surrey B.K.A., in connection with the Guildford and West Surrey Agricultural Association. Nineteen classes (five open to all). Many medals. Schedules from F. B. White, hon. secretary, Marden House, Redhill, Surrey. **Entries closed.**

Aug. 7th, at Madresfield, Malvern.—Annual Show of the Worcestershire B.K.A. Three open classes; one for single 1lb. jar of honey (entry free). Schedules from G. Richings, 2, Shrubbery-terrace, Worcester.—**Entries close Aug. 2nd.**

August 7th, at Bruton.—The Annual Show of the Somerset Bee-Keepers' Association, in connection with the Bruton Flower Show. Open classes. Schedules from Mr. R. Litman, South-street, Castle Cary, Somerset. **Entries close August 2nd.**

August 13th, at Wye, near Ashford.—Kent Honey Show, 12th Annual Exhibition. Classes to suit all bee-keepers. Splendid prizes; small entrance fees. One 6 guinea and two 5 guinea challenge cups; also a 2 guinea champion silver cup. A new class this year for six 1lb. of extracted honey, put up in short bottles, or other vessels, suitable for getting honey out of easily, and for sending honey away in. Open to United Kingdom. Two silver medals best exhibits of bee appliances. Twenty-five different classes to enter in. Staging and repairing carried out by experienced men. Prize schedule and entry form free on application to Mr. Alfred Lepper, secretary, Kent Honey Show, Scotton Street, Wye, Kent. Prize schedule and entry form will be sent to all exhibitors of last year without application.

August 19th and 20th, at The Dome, Brighton.—Annual Show of the Sussex Bee-keepers' Association, held in connection with the Brighton, Hove, and Sussex Horticultural Society's Summer Show. Six open classes for honey, including single bottle and section. Schedules from C. A. Overton, Hon. Sec., Beecroft, Crawley, Sussex.—**Entries close August 11th.**

August 20th, at Radstock.—Eighteenth Annual Show. Open class for honey. Schedules from B. M. Clark, Foxhills, Radstock, Bath. **Entries close August 16th.**

August 27th, at Chester.—Annual Show of the Cheshire Bee-keepers' Association, held in connection with the Cheshire Agricultural Society's Show. Several open classes, and good money prizes. Schedules from T. A. Beckett, St. Werburgh Chambers, Chester.

August 27th and 28th, at Derby.—Derbyshire Agricultural Society's Show. Bee and honey section under the management of the Derbyshire Bee-keepers' Association. Open classes for bee appliances and honey. Schedules from R. H. Coltman 49, Station-street, Burton-on-Trent. **Entries close August 21st,** not 15th as stated on schedule.

September 2nd, 3rd, and 4th, at Newcastle-on-Tyne.—The Northumberland and Durham Bee-keepers' Associations, in conjunction with the Durham, Northumberland, and Newcastle Horticultural Society's Show. Schedule from Hon. Sec., the N.B.K.A. Wooler; the D.B.K.A., Butterknowle; or Sec. of Horticultural Society, 24, Grainger-street West, Newcastle-on-Tyne.

Deddington Horticultural Society 5th Annual Flower Show, Tuesday, September 2nd.—Honey class open to the kingdom. Schedules from Mr. H. J. Harmsworth, hon. sec., Deddington. **Entries close August 28th.**

September 3rd, at Lancaster.—Lancaster Agricultural Society. In conjunction with the Lancashire B.K.A. Classes for honey, bee produce. Specials, including two silver challenge cups, two silver and one bronze medals. Write for honey schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 27th.**

September 4th, at Abington Park, Northampton. Northants B.K.A. Annual Honey Show. Special prizes for open classes, including one for single 1lb. jar. Entry free. Schedules from R. Hifford, Kingsthorpe, Northants. **Entries close August 28th.**

September 12th and 13th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes, with liberal prizes for appliances, extracted honey, sections, fitting-up frames, fitting-up sections, judging competition, &c., &c. Schedules from G. Hayes, Mona-street, Beeston.

Sept. 24th and 25th, at Kendal.—The Annual Show of Honey, Wax, and Appliances of the Cumberland and Westmorland B.K.A., in connection with the Northern Counties Fruit Congress, in the Market Hall, Kendal. Eleven open classes. Liberal prizes. Note.—All prize-money will be paid on second day of show. Schedules from G. W. Avery, Wetheral, Carlisle, or Geo. Chatham, Low Green, Staveley, Kendal.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

J. C. Clark (Lewisham).—*Wild Bee.*—The insect is a mason bee.

J. N. (Millom).—*Unsuccessful Queen Introduction.*—You should have put a comb of brood in the nucleus with each of the queens. The bees have evidently refused to feed them, and this is the cause of death.

J. T. S. (Cambridge).—*Honey Extractor.*—We do not know the extractor at all, and have never heard the name, therefore we cannot say what was the original cost of same.

Llandrillo.—*Dealing with Stocks in Skeps.* (1) We do not think they will swarm. (2) Drive the top skep first, and then the one underneath.

Anxious Enquirer (Glos.).—The brood has been chilled. The queen should commence to lay shortly.

J. B. (Broomhill).—We do not know of any importers: it is generally sent in to be sold by commission agents. If you apply at the docks no doubt you would obtain the names you require.

J. W. G. (Huddersfield).—Yes, take the bees to the moors, and put on a super. If the weather keeps warm they will at least store sufficient to winter on, and it is just possible they may give you some surplus.

W. B. (Wolverhampton).—The plant is very dry, so that it is impossible to recognise it. At any rate, it is not heather.

Gowkthapple.—The drone is an albino. We appreciate your kind letter and wishes very much, and congratulate you on your success with the bees.

Floreat Salopia.—Our advice is not to introduce Italian bees, neither would we get fresh blood into the apiary for a while—until the "Isle of Wight" disease is less rampant.

J. Rose (Farnborough).—Your bees seem to be in a fair way to become immune.

Suspected Diseases.

J. L. M. (Llandaff), S. T. (Colchester), J. F. B. (Buckley).—The bees are affected with "Isle of Wight" disease.

F. H. B. (Towcester).—The bees show slight signs of the disease. Watch them for a day or two, and if they get worse, destroy at once.

A. Griffen.—The bees were far too dry for us to form any idea as to the cause of their death.

C. Lowe.—The comb contains chilled brood only; there is no disease whatever.

W. Kelso.—Both lots of bees are suffering from "Isle of Wight" disease.

P. V. Leeke.—It is "Isle of Wight" disease.

L. S. (Mindrum).—We are sorry to say the bees show every sign of "Isle of Wight" disease.

E. J. H. (Stratton).—The bees are affected with "Isle of Wight" disease. It could not come through the foundation.

B. J. (Lichfield).—The comb is affected with foul brood.

Honey Samples.

A. Willmott.—The honey is a very good light sample, worth 10s. per doz., or 60s. to 65s. per cwt.

Quis.—The honey is from mixed sources; it is good in density and flavour, but rather dull. We should hesitate to show it, but if you do it should go in the medium class.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ¼*in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

KENTISH uncapping knife, 9in. blade, with cutting heel and receding handle, cheap and effective, 1s. 9d. each; pair for 2s. 6d., post free.—WIGLEY, Whitehill, Gravesend. v 51

COWAN geared extractor, reversible cages, good condition, 25s. cash.—HACKER, Crockerton, Warminster. v 5

SWARMS and nuclei, from pure Carniolan, Dutch, and Italian queens, imported from the best breeders; also from Sladen's "British Golden Prolifics" (one of his best 1912 queens); also Native Blacks; disease unknown.—MAJOR WEDDERBURN MAXWELL, Glenlair, Dalbeattie, Kirkcudbrightshire.

LIGHT CAMBRIDGESHIRE HONEY, in 1lb. bottles, 8s. 6d. dozen, carriage forward, cash with order; sample, 2d.—A. E. WILLETT, Cheveley, Newmarket, Cambs. v 4

SPLENDID 1913 HONEY, 15s. 6d. 28lb. tin; 60s. cwt.; sample, 2d. — DUTTON, Terling, Essex. v 3

FINEST light extracted honey, at 58s. per cwt., f.o.r.; sample, 2d.—SIMCOX, 17, Victoria-road, Fallings Park Wolverhampton. v 2

SUPERIOR Lincolnshire clover honey, 60lb., 40s.—SMITH, decorator, Caistor. v 1

CHOICE, prolific, healthy 1912 queens, from 100lb. colonies, 1s. 6d.—PEARSON, Shaibourne, Wilts. v 100

FOR SALE, fifteen stocks, all healthy, in grand condition for heather; also new extractor, reason for selling leaving district.—CORNWALL, Barmoor Castle, Beal, Northumberland. v 94

FOUR strong lots driven bees, first week August, 5s. per lot; boxes returnable.—THOMPSON, Apiary House, Gowdall, Snaith, Yorkshire. v 96

WANTED, first grade sections; also extracted. —Price and particulars to Box XX., "Bee Journal" Office, Bedford-street, W.C.

WANTED, one frame observatory hive; give price and particulars.—KENNEDY, Echt, Aberdeenshire. v 93

EXTRACTED HONEY, finest Cheshire, clover, good density and colour, 9s. dozen; samples.—WALTER S. BASNITT, Acton Grange, Warrington. v 10

FOR SALE, pure English honey, in 14 28lb. tins, at 5½d. per lb.; sample, 2d.—GEO. NEAL, Freckenham, Soham, Cambs. v 9

ONE HONEY PRESS, with vat and tap, 9s.—HEATON, Eastview, Methwold, Norfolk. v 8

PROLIFIC CARNIOLANS, ten frame stock, pure bred, 30s.; strong four frame nucleus hybrids, 15s. 6d.; young queens.—FROST, Hartshill, Stoke-on-Trent. v 13

GOOD HONEY RIPENER, ½cwt., complete, 10s. 6d.; wax extractor, sound, 10s. 6d.; two strong supers shallow frame combs, 5s.; two Canadian feeders, 2s.—REV. JARVIS, Hambrook, Bristol. v 16

FOR SALE, two 10-frame stocks of Banats 25s. each; also few stocks Blacks, and 3-frame nuclei.—BARLOW, beekeeper, Newcastle, Staffs. v 11

LARGE EXTRACTOR, two cages, not geared, working order, fair condition, 7s. 6d., f.o.r.—PARKER, Melrose, Wrea Green, Lancs. v 12

5 CWT. finest light extracted honey, and nine dozen well filled sections, in card cases; what offers?—TREVISE, Dungeness, Kent. v 6

QUEENS.—1913 English black fertiles, 3s. 6d.; virgins, 2s.—ROPER, Thorpe-on-the-Hill, Lincoln. v 71

SURPLUS 1913 QUEENS.—Sladen's Carniolian hybrids, 5s. 6d.; blacks, 4s.; orders rotation. —WHEATLEY, Spa, Hinckley. v 78

WANTED, any quantity good sections honey; state price.—BOWDEN, Broomhill, Witley, Surrey. v 77

STRONG, healthy nuclei, on six frames, with four frames of brood and 1913 prolific laying queens, 15s. each; a few stocks for disposal, on ten frames brood with 1912 queens, 30s. each, guaranteed healthy, no disease of any kind in the district.—A. SHARP, Halstead Farm, Barrowford, Lancashire. v 56

3 STOCKS BEES, young, vigorous queens, healthy, packed free, 25s.—BERNARD SKINNER, Dereham, Norfolk. v 50

WANTED to purchase, secondhand Root-German wax extractor; send particulars.—HILLMAN, Stonehouse, Glos.

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Beekeepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

UNIQUE wasp-proof cases, cheapest sold, 9d. dozen, 5s. 9d. gross.—BOWEN, Coronation, Cheltenham.

ONE MORE CHANCE; use Bowen's "Isle of Wight" remedy; striking success, 1s. 6d.

DRIVEN BEES, 6s.; queens, 2s. 6d.; foundation machine, 70s.—The Hurst, Kington, Worcester. v 14

HEALTHY DRIVEN BEES, 6s. 6d. lot, carriage paid; boxes returnable, cash with order.—G. A. GILLETT, Moreton-in-Marsh, Glos. v 15

SIX single, three double Conqueror W.B.C. and Cowan patterns, as new; special hybrids; large geared extractor, ripener, &c., once used; offers.—DAVIES, 14 Ynysgau, Merthyr. v 98

TWO HIVES, frames, super and section racks, drawn combs, clearer, slow and rapid feeders, £1.—29, Ulundi-road, Blackheath, S.E. v 99

SECTIONS WANTED, glassed or unglassed, by HONIELADE CO., 23-25, Moorfields, London, E.C.

WANTED to purchase, one or two tons new English honey; quote lowest in bulk, or in tins; free with sample.—CHARLES C. WILLIAMS, LTD., 281, Broad-street, Birmingham. v 73

HEALTHY DRIVEN BEES, with queens, until August 10th, 5s. per lot; after, 4s. 6d.; boxes returnable; orders in rotation; cash with order.—T. PULLEN, Ramsbury, Hungerford. v 86

HEALTHY DRIVEN BEES, August delivery, 6s. 6d. per lot, safe delivery; fertile queens, 3s. each.—BRADFORD, Tibberton, Droitwich. v 90

NOW IS THE BEST TIME to requeen by Snelgrove's method. Easy, reliable, profitable. 6½d.—SNELGROVE, Albert Quadrant, Weston-super-Mare; or "B.B.J." Office, 23, Bedford-street, Strand W.C. v 91

1913.—PURE imported Golden Italian fertile queens, guaranteed healthy, vigorous, prolific, 4s.; specially selected, 7s. 6d. each, prompt despatch.—J. B. GOODARE, Woden Apiary, Wednesfield, Wolverhampton. v 93

FOR SALE, complete hives of bees, golden colour, with frames and sections.—BARKER, 23, Bolton-road, Grove Park, Chiswick. v 68

SECTIONS WANTED, any quantity, cash; also extracted.—F. W. WEITZEL, 21, Lonsdale-road, Kilburn, N.W.

NOW is the time to re-queen in order to produce young bees to strengthen stocks for winter.—Choice fertile tested English queens, excellent strain, safe arrival guaranteed; send for catalogue of up-to-date bee appliances. Winner of the first prize at Royal Shows, 1910, 1911, and 1912.—WILKES, Lichfield-road, Four Oaks, Birmingham.

RE-QUEEN NOW, with splendid strain hybrids, very quiet, very prolific, 5s. each.—ADAMS, Tilford, Heathhurst-road, Sanderstead.

1913 PURE FERTILISED CARNIOLAN QUEENS, 4s.; virgins, 2s.; safe delivery guaranteed, but not safe introduction. Orders executed in rotation.—FREDERICK VOGT, 63, Beresford-road, Canonbury, London.

Editorial, Notices, &c.

REVIEWS.

The A B C and X Y Z of Bee-culture.—By A. I. Root and E. R. Root (Medina, Ohio, U.S.A., The A. I. Root Company; and London, The British Bee Journal, 23, Bedford Street, Strand, W.C., price 9s.). It is hardly three years since we revised this book and now a new and enlarged edition has just made its appearance. A great part of the original book, which first came out in 1877, A. I. Root said was really the work of the people, and the task devolving on him was to collect, condense, verify, and utilise what had been scattered through the pages of *Gleanings*. The plan was adopted of having the type standing and only printing a limited number of sheets, just as they were wanted, so that alterations could easily be made, and the book brought up-to-date. This has been going on ever since, and the progress of bee-keeping during the interval has been so great that now there is not very much of the original matter left. Moreover the type was getting worn, so that advantage has been taken of this to thoroughly revise the book, and print it on entirely new type. The result has been a great success, so that now it is the largest book published on the subject of bee-keeping. The matter has also been re-arranged for more easy reference, and there is a copious index, which, as a rule, is a weak point in American books. The revision has been carefully done by E. R. Root, the editor of *Gleanings*, and although one misses many of the original articles of the veteran, A. I. Root, many specialists have been requisitioned, and their articles add value to the work. For instance, R. E. Snodgrass treats on the "Anatomy of the Bee," and J. H. Lovell, a botanical expert, writes on "Honey plants and their botanical history." Practical work is fully dealt with by a number of successful bee-keepers and specialists in the particular subject with which they treat. We would add that the book is a complete cyclopædia of everything pertaining to bees and bee-keeping, and in perusing it one is struck with its completeness. A large number of new illustrations have been introduced and the changes and additions have increased the size of the volume to 750 pages. It is a book we can thoroughly recommend as being practical and written in the simplest and plainest language possible. The increased size has made it necessary to charge more for it, and it can now be obtained from the B.B.J. office for 9s., post free.

Further Report on the "Isle of Wight" Disease (Microsporidiosis).—By Dr. Graham-Smith and others. This is published by the Board of Agriculture and Fisheries, London, and is issued as a supplement to the July number of the *Journal of the Board of Agriculture* (price 4d., post free). Since the last report, issued in May, 1912, Dr. Graham-Smith, and those associated with him, have been continuing their investigations into this disease, and have now given the final results of the work carried out on behalf of the Board of Agriculture and Fisheries. The authors confirm their opinion that the disease is caused by the protozoal parasite, *Nosema apis*, and that most of the outbreaks in which stocks have dwindled and died without apparent cause are due to the presence of this parasite. Their conclusions are that at the present time no part of Great Britain appears to be free from the disease. Certain symptoms, such as the inability of some of the diseased bees to fly, the presence of numerous bees on the ground in front of the hives, and the gradual dwindling of stocks are common, but many other symptoms have been recorded, and no one symptom is characteristic of the disease. It has been shown that the disease is probably endemic, but that only during severe epidemics does the disease attract much notice. Such epidemics are especially apt to make their appearance during cycles of wet and cold springs and summers, but continue subsequently for some seasons.

The life history of *Nosema apis* is discussed, as also are the methods adopted for experimental infection, with spores of *Nosema*, obtained from bodies of diseased bees, which showed that the disease could be produced in healthy bees by feeding with syrup or honey containing spores, by contaminating their food with infected excrement, by allowing them to feed on candy previously used by infected bees, and by placing bees that have died from the disease in cages occupied by healthy bees, and by confining bees in cages in which diseased bees have travelled. It is specially pointed out that the spore stage alone appears to be capable of giving rise to infection. The various modes of spread of the disease are discussed, and it is shown that water and moisture near hives contaminated with infected excrement appears to be the most important factor in the dissemination of the malady, although pollen, nectar, or other substances collected as food may on rare occasions be infected. The disease may be spread from hive to hive, or from apiary to apiary, by the interchange of adult "carriers" and to a less extent by robbing, by infected swarms entering healthy apiaries, and by the occupation of old hives. Infected "carriers" are probably

most important agents in spreading the disease by infecting water or food with their fæces, as well as keeping it in existence from season to season. The trade in bees from infected districts helps to disseminate the disease over greater areas than would be reached by natural means. Cold and wet weather greatly influence the spread of the malady. Other insects associated with hive bees, such as wax moths, wasps, and ants, and other species of bees, may at times carry the spores and thus act as disseminators of the disease.

When we come to treatment and prevention we are told that there is little evidence that treatment by any of the remedies which have been suggested results in permanent cure, though amelioration of the symptoms for a time not infrequently occurs. These remedies, which have been advocated by writers in the "B.B.J." are discussed on pages 29-34 of the report, and their value in *microsporidiosis* appears to the authors to be without satisfactory proof. Prevention is therefore the only satisfactory method of controlling the disease. Healthy stocks should be removed from the neighbourhood of diseased ones, and the bees supplied with an easily accessible supply of clean water, which should be changed daily and protected from contamination by flying bees. Bees which have died from the disease, frames, quilts, etc., from infected hives, should be burnt, and the hives should be disinfected, preferably by slight charring. The ground should be turned over and treated with lime. Diseased stocks should be destroyed as soon as the condition is diagnosed, and healthy bees should not be introduced into an apiary where the disease has shown itself. Driven bees and stocks from infected districts should not be imported into other districts, and an endeavour should be made to build up apiaries from stocks which have escaped infection.

Dr. Malden, in section III., says that continued bacteriological investigations have failed to reveal any species of bacteria constantly associated with the symptoms of "Isle of Wight" disease, and experiments have shown that *Bacillus pestiformis apis*, in pure cultures, is not pathogenic to bees. He, however, points out that crawling, the symptom on which the "Isle of Wight" disease is so often diagnosed, is merely a sign of weakness from parasitic intoxication or other causes, and may possibly at times be due to a specific bacterial infection.

Arrangements have been made for further investigation into the character of the disease with the object of finding some effective remedial or preventive treatment, and the Board of Agriculture would be glad if all bee-keepers wishing to assist would communicate with them. In no case should bees either alive or dead be sent unless asked for, and then only in accordance with directions which will be supplied. Letters should be addressed to the Secretary, Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W. Letters so addressed need not be stamped, but the words "Bee Disease" should be written across the top left-hand corner of the envelope.

Ptcheli e ich Gisn (The Life of Bees).—By M. A. Dernoff, editor of *Ptchelovodnaya Gisn*. (St. Petersburg: of the author, Matveiefskaya 11, price 35 kopecs, or 9d.). This little book of 84 pages deals principally with the natural history and anatomy of the bee, and a short account of the life of bees throughout the year is also given. There is a chapter on diseases, and another on the enemies of bees. In addition to the 57 illustrations dispersed through the book there are two coloured plates, one showing sections of the abdomen of a queen bee and of a worker for comparison, while the other is a longitudinal dissection of a bee, which displays its internal organs. The colouring of the different parts helps to identify them. For instance, the alimentary canal with the honey sac and intestines is coloured yellow, the sting green, the nervous system blue, and the tracheæ and air sacs white.

Glavniya posechniya rabotee (St. Petersburg: A. F. Devrien, price 65 kopecs, or 1s. 5d.) is the third edition of another book by the same author. In the 257 pages of which it consists, M. Dernoff goes very minutely into the description of the work in the apiary throughout the year. As the book is thoroughly practical it has been in great demand, and only two years have elapsed since the previous edition was issued. It has been considerably enlarged, and a special chapter has been devoted to the products of the hive.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By George Hayes, Beeston, Notts.

SNOWDROP (*Galanthus nivalis*).

No. 24 NAT. ORDER. *Amaryllidea.*

How eagerly many people look for the first flowers of the year, more especially those of us who are bee-keepers, and who, of course, have a garden.

In January we have the blooms of the Christmas Rose, and the Aconites; and in the last days of this month, as I was writing these notes this year, I had blooming in my own garden, in addition to the fore-going, a fairly large number of Primroses, Polyanthus Primroses, Wallflowers, Garden Daisies, Crocuses, and Snowdrops

Nor are we alone in the pleasure derived from these welcome visitors, the bees are also aware of their presence, and the early flowers are, on a sunny day, well favoured with the attention of their lovers, who are seen in and out of every bell, visiting them time after time, even forcing their way into those just opening; so that one can scarcely conceive how a single pollen grain, or a drop of nectar can ever be wasted in these early flowers.

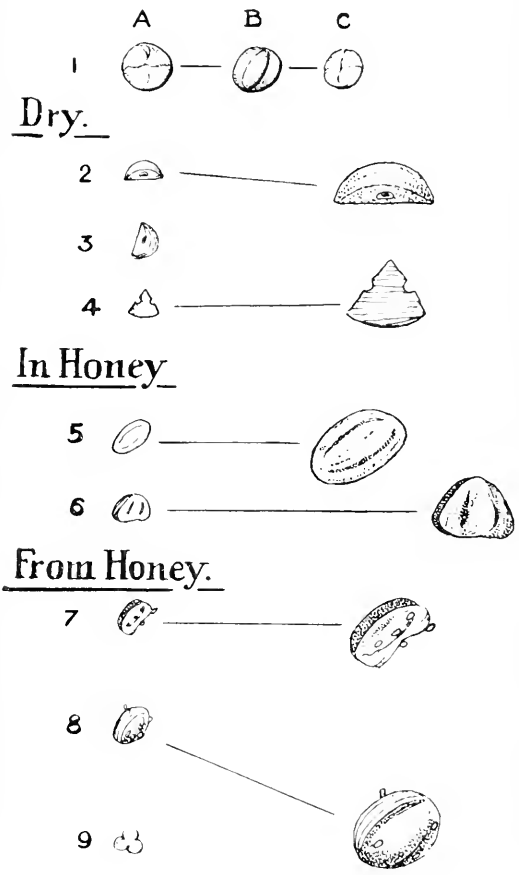
The Snowdrop is undoubtedly best known as a garden plant, though really wild, just like many others that have been introduced into our gardens. Although it may not be considered by some to be indigenous, yet after 500 years of naturalisation it can well be looked upon as such.

Its generic name —"Galanthus"— is a word from the Greek, signifying "milk flower," and its specific title is indicative of the snow, just as its common name implies a drop, or pendulous bell in the snow. It is a perennial with a bulbous root, and in its wild state its graceful, drooping little flowers must be sought for in shady pastures, woods, orchards, and hedgerows during February and March.

The bulbs grow in compact clusters, and from each spring erect two, or rarely three long narrow leaves, bluish-green in colour, which at the time of flowering are only from three to six inches long; but after the bloom has died away they continue to lengthen until they are about twelve inches long, and are then drooping instead of being erect.

The flowering stem that rises from amongst the leaves bears but a single, drooping, sweet-scented flower, somewhat bell-shaped, and composed of six segments; three of these are pure white, whilst the other three, which alternate with them, and are placed within them, are half the length and blotched, or fringed, at their outward extremity with bright green. The three outer segments spread outwards considerably more than do the others. This flower has been looked upon for ages as the herald of spring, and as such is mentioned by many of the poets.

I find, on dissection of an anther, that the immature pollen is contained in mother-cells, each cell having four grains, the whole forming a sphere, as seen at Fig. 1—A being a top view, B a side view, and C a section through the centre; but when ripe, they leave the anther singly, their shape then being a quadrant. To explain better, consider an orange divided into four equal parts, and held together by the skin or peel, the latter breaks and librates the four quadrants, and these represent the shape of the fresh pollen grains as they leave the anthers of the Snowdrop, as seen in Figs. 2 and 3. It will also be noticed that they have a depression in each face of the angle (Fig. 4). They measure $\frac{3}{1000}$ × $\frac{3}{1000}$ of an inch. Their colour is a greenish-yellow. I have not seen sufficient of this packed in the corbiculæ to note its colour there.



POLLEN OF SNOWDROP.

In honey, the pollen grain alters slightly, as seen in Figs. 5 and 6, and increases somewhat in size, measuring now $\frac{4}{1000}$ × $\frac{3}{1000}$.

When extracted from honey it loses much of its wedge-shaped form, and assumes a more circular one when viewed longitudinally, and subtriangular when seen on end, see Figs. 7, 8, and 9. Many of the grains have a large number of pseudo processes, but no true ones appear to develop. In this state it measures $\frac{1}{1000}$ of an inch in diameter.

(To be continued.)

BRITISH BEE-KEEPERS' ASSOCIATION.

As the Secretary will be abroad for some little time on and after August 16th, any matter of urgency should be sent on to be dealt with before that date.

AMONG THE BEES.

WHY SHOULD BEE-KEEPERS RE-QUEEN?

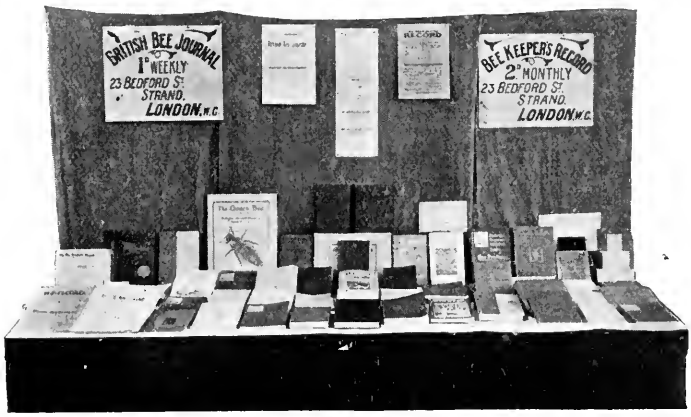
By D. M. Macdonald, Banff.

Age alone is no true criterion of a queen's fitness, or unfitness, to continue ruling over a hive, because some queens get worn out more in three or four months than others do in three or four years. Yet it does not do to keep old queens. Age brings weakness, unprolificness, an inclination on the part of the bees to swarm, and a tendency on the part of the queen to lay too large a percentage of undesirable infertile eggs; with the consequent waste of time, cost of material, and it causes an undue strain on the workers, who feed and nurse these useless and pampered individuals. Therefore, re-queen a hive with such a defective mother, and do it just before these weaknesses develop too far.

A colony doing poor work, apart from mere numbers, may often be discovered; and as bees acquire the spirit of industry from this side of the family, it is imperative that inefficient queens should not be permitted to hand down these undesirable traits to future generations, therefore her deposition should be seen to in good time. Poor workers can be roused to action by the presence of a prolific queen, for it is a fact that in this and other ways a queen has a marvellous power of giving tone and energy to the whole community. She is not the autocratic ruler our forefathers considered her, but still she has a magic, mystic, influence for good in the destiny of the colony.

A failing queen should be deposed immediately on the discovery of her debility. Queens suffer from several ailments, and at times, from accidents in manipulation, the careless handling by her owner, or the treatment she may receive from her own bees, she may be injured in such a way that her ovaries cease to produce the usual number of eggs. Whatever the reason may be, a glance at the interior will show evident signs of the effect of deterioration.

Where a colony, from whatever cause, turns out to be queenless, it goes without saying that here is a case for re-queening. It must be remembered that a queen at certain seasons of the year may lay from 1,000 to (perhaps) 5,000 eggs a day. Even a few days of an interregnum must therefore mean a very grave deterioration of the colony. When this is lengthened into weeks the matter assumes a serious crisis in the life history of the colony.



OUR BOOKSTALL AT ROYAL SHOW, BRISTOL.

As useless and profitless as no queen at all is the case of a virgin queen who has failed to get fertilised, and cannot therefore do anything to keep up the population. Such a queen should be killed as soon as she is discovered, because while she presides no other queen mother, however valuable, will be permitted to live in that community. This is one of the points where the presence of the worker bee seems to fail in its effect. They will hug to their hearts a *thing* that never can add to the population one single profitable unit, and eject the most prolific mother ever reared. Here is an urgent call for the bee-keeper to re-queen right away.

Viciousness is so grave a fault in a colony of bees that it should be suppressed with a high hand, and fortunately the

owner has the remedy in his own power. He has simply to depose the queen and replace her by a mother from a gentle strain. The preliminary process is sometimes a rather trying one, as many who have carried it out can testify, and therefore I dealt with it more fully in the first issue for July.

Where comb honey is being worked for it is necessary to have the sections cleanly and neatly capped. Bad or slovenly capping takes from the value of such honey. Certain strains of bees, especially crosses and most Italians, are so very defective in their capping that they should never be used when working for section honey. Most of them seal thinly in a way that is not only unpleasing to the eye, but the capping is so flat that the enclosed honey soon deteriorates. Blacks and Carniolans are the best cappers, both races finishing off sections with admirable accuracy, and with a fine white uniform sealing, therefore have such queens heading stocks.

Propolis is used to an extraordinary extent by some races, Caucasians and all golden-yellows in my experience being arch transgressors. Where frames, sections, quilts, and hive interiors are heavily daubed with this nuisance it is advisable to change the queen heading the stock. It is curious how even the *same bees* desist under the benign influence of a new queen. One would not wonder at her own progeny ceasing to over-propolise, but that her presence should have a purifying influence on her predecessor's children is nothing short of a marvel.

Watery honey at times may be the product of the season, but I am decidedly of opinion that it sometimes results from certain strains of bees. How otherwise can adjoining hives show the one perfectly normal honey as to consistency, and the other honey so thin as to start "weeping" very soon after it has been gathered? I am prepared to set the defective product down to the influence of the queen, and if this is correct here is another cause for deposing the erring mother.

Have some of you ever discovered a strange perversity in some colonies for constructing brace and burr combs? I am well aware that the defect may often be set down to faults on the part of their keeper, such as irregular spacing; but, apart from that, one will note a colony here and there developing a perfect mania for building such combs above frames, between frames, below frames, here, there, and everywhere about and upon chambers. Certain seasons are worse than others, but again the fault seems to me to lie in the strain of bees, and, therefore, the cure is to re-queen that colony.

Bees are proverbially a busy, industrious race of insects, indefatigable in their labours when forage and weather permit. Yet, now and again, the population of a hive may develop into loafers. How frequently do we discover at the end of the season that hives with populations as large to all appearance as others standing side by side yield only a fraction of the surplus the other bestows on us. The flight board is often seemingly congested, but results fall far short of expectations. Bees can loaf at times. Again I would advise re-queening as a cure. Finally, a queen, full sister to another reared in the same batch, may from the start lay 1,000 eggs, while her sister lays 4,000. Such a queen should not be allowed to live. To my dozen reasons why bee-keepers should re-queen, I have no doubt others can be added.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

ON SWARMING.

[8776] Who would wish to do away with swarming? It is the charm of bee-keeping. It is the florescence of the hive. It dominates skep bee-keeping, and even puts to scorn the efforts of the average "modern" bee-keeper. Why not keep swarming dominant? It is the best propagandist, the best advertiser of bee-keeping, the thing that spreads the "bee-enthusiasm" more than anything. Let us then commercialise it, and again make the bee-keeper count his success in swarms, and assess profits even in casts.

When the skeppist gets a swarm he is congratulated. It is prospective profit. It is hived in a new skep, and all the honey it gathers is confiscate to the owner.

What a contrast when we turn to the modern bee-keeper. The swarm is an unwelcome event. Its advent has upset well-laid plans. Or it is received well, but rather disparaged. There is some imagined loss of honey, and in many cases no immediate profit at all, but only increase ensues.

Well, here are a few hints to rejuvenate swarming; to put it in its proper and honoured place.

First the skeppist. Let him get full value out of that great invention, a piece of queen-excluder zinc, and let him bear

steadily in mind that the swarm is "profit," and all that it gathers is to be turned into money. It is not brood that is wanted, but honey. The less brood the more honey and the better honeycomb. Therefore a small skep should be used to hive a swarm (I would suggest a very small skep) and to give it a large super or dandy or a rack of sections. The excluder zinc will restrain the queen. A large brood-nest for a stock hive, a very small one for a swarm; a small super or dandy for a stock hive, a very large one, relatively, for a swarm—bee-keeping, indeed, standing on its apex.

And now to the frame-hive. We are not standing still. A glance at the "B.B.J." advertisements will show that the shallow brood-frame has evolved, and with a box of these frames, a sheet of queen-excluder, and a rack of sections, the potential labour in the swarm can be turned into the finest "surplus" honey. How much better than putting back a swarm, and cutting out the queen-cells! Is it not bad practice putting back now, when "Isle of Wight" has made bees so scarce? Fancy a propagandist putting back a swarm!

This to the south-country bee-keeper, particularly those with a short harvest.

In the North, with the late flow, the bee-keeper has to have one eye on the clover and the other on the heather; but always having in mind that it takes about thirty-five days from the laying of the egg to produce a field worker, swarms can be profitably hived in full-sized brood combs; but shallow brood frames always for late swarms and driven bees.—J. N. KIDD. Well Close, Stocksfield.

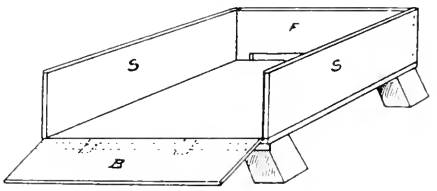
BOTTOM VENTILATION FOR HIVES.

[8777] In response to our request for particulars of the ventilating chamber of his hives, Mr. Wigley has kindly sent the following drawings:

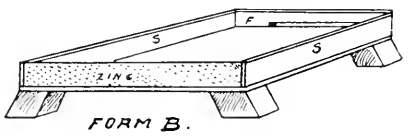
A. The sides (s) and front (f) of 6in. board, are nailed on flush with the edge of the floorboard. The front is slotted for an entrance, and the porch is moved on to it from the body box. The back (b) is hinged to the floorboard, and may be closed up in winter, and secured with a button. In summer it is thrown open, and acts as an alighting board. Or if preferred, perforated zinc may be nailed across the opening.

B. Here slating batten (2in. or 3in.) is used. The back is permanently closed with perforated zinc. With 2in. batten the front (f) can be dispensed with, and a pair of deep sliding doors used to contract the entrance.

Form A permits of entry beneath the brood chamber at any time, to sweep out the floorboard or to insert a rapid feeder, &c. Last season the doors were left wide open all the summer without evil results.



FORM A.



FORM B.

CAPPINGS OF COMB.

Bee-keeping in New Zealand (p. 238).—Analytical comparison of the statistics for the three principal districts, in the order given, Auckland, Canterbury, and Wellington, brings some interesting detail to light. The average number of colonies owned per bee-keeper reads: A., 7.14; C., 6.38; W., 8.5. The average per colony: A., 22.9lb.; C., 15.8lb; W., 27.0lb. The average output per bee-keeper: A., 164lb.; C., 101lb.; W., 229.8lb. The average honey per lb. of wax produced: A., 44.3lb.; C., 40.9lb.; W., 80.8lb. Although Auckland leads in the number of bee-keepers, it looks as though the big men were located in Wellington, and might well dispute the title. Possibly more section honey is produced in Auckland and Canterbury, but if extracted honey is the rule, either the methods or the conditions of Wellington are worth notice. Perhaps one of our cousins will tell us.

Prevention of Increase (p. 257).—Is it not a slip of the editorial pen to advise killing of the queen and cutting out of *all* queen-cells? If not, would not "after-swarming" (if I may be allowed the bull) occur when the bees attempted to re-queen? [The words "but one" have inadvertently been omitted.—ED.]

Empty Racks Over or Under (p. 265).—It is not every stock which will respond to the plan of the empty super over the full one. Perhaps the better plan is to use a combination of the two methods, placing the empty super "under" in the early half of the honey flow and "over" during the latter half. In the former case, it is likely to be adopted earlier, and in the latter it is not so likely to spoil a lot of partly finished sections. A modification, where foundation in extract-

ing combs is given, is to divide the filled combs between the two supers, placing them at the outsides, guarded by a hanging divider. The same thing can, of course, be done with sections in hanging frames. By the way, the best super for the tail end of the flow is a set of extracting combs.

Treating Disease (p. 265).—I am interested to note that Mr. Mace gives a plan of my own for dealing with foul brood. Essentially this was to "double" the brood over excluder every three weeks, thus reducing the diseased colonies by one half each operation. I may say that the plan did not meet with the approval of the authorities, but it will work with the minimum of loss from F.B. in the hands of a *careful* bee-keeper. I am not so sure of its efficacy for I.O.W., which in its malignant state seems to baffle nearly every effort. Mr. Mace retains the brood combs, but as the bee-keeper has now a new set, would it not be sounder to render the old combs?

Not Ogick, but Ogich (p. 266).—I find that I reproduced a misprint occurring in the fascinating account of East African bee-keeping methods. Amends are made herewith to the miscalled tribe, and apology to those who have misdirected letters, postage upon which I shall be happy to refund!

Ventilating Hives (p. 276).—Extra ventilation might be given in a "W.B.C." hive through the side of the body box. Such hole or holes might begin at the sixth frame and run to the tenth, the slot being about 1in. wide and covered with perforated zinc. A little ingenuity would make the zinc removable from the outside, so that the propolis might be detached by boiling. A small hole, say 1in. diam., might be placed in the top of the division board, covered with perforated zinc inside, and a turn button of plain zinc outside. This would allow of graduated ventilation for a nucleus, up to full ventilation for a stock.

Wax Scales (p. 282).—I don't know whether the error lies in the stated number of scales to the grain, or in the number of grains taken to the lb., but, as stated, the result would be about half of what "D. M. M." gives, or conversely there should be about 200 scales to the grain. Perhaps the scales were wrong! But why should it be "a laborious task to the wax producers"? It would appear to be about as laborious as a Turkish bath! Taking "D. M. M.'s" figure as the probable, 1lb. of bees would have to produce a set of scales some twenty times. There is, however, little probability that the same bees would thus consecutively and exclusively secrete wax.

Starters (p. 287).—What does "H. T. S." mean by the application of this term to the bees? When does a bee start? Whatever "H. T. S." means, it is perhaps a pity to use the term at all, in view of its definite significance in bee-keeping. "Starters" are generally understood to be slips of foundation used simply to start the building of straight combs.

Destroying Stocks (p. 287).—A simple method is to close the entrance at night, and suffocate the bees. Crush a little cyanide of potassium in a spoon, moisten it, and slip it under the quilt, inverting the spoon. Tuck the quilt tightly down all round. Remove the entire contents of the hive to the fire next evening. It is a pity to use this method if there is much honey, as the honey would be destroyed, cyanide being very poisonous. If the honey is to be taken, the old puff ball method is good. Insert the burning puff ball and close the entrance. The puff ball can be slipped in well alight on a shallow tin lid. The bees should be destroyed as soon as stupefied. Sulphur can be introduced in the same way. A sheet of corrugated paper soaked in strong saltpetre solution and dried may be sprinkled with crushed sulphur and lighted in several places. It should be first ascertained that the tin or the sheet will enter easily.

Queries and Replies.

[8784] *Removing Bees from Tree.*—(1) Would you kindly tell me through the medium of your paper as to the method one would employ to take a stock of bees lodged in a hollow tree, the only outlet being a small hole some distance from the ground. The bees have tenanted the tree for quite a year, and it is not desirable to leave a box outside the colony for any length of time, as the tree is in a forest, which is public. (2) I have a stock of bees on cottager's frames and wish to get them on the standard ones, could you tell me the best way to do so? Hoping this is not bothering you.—J. F. R

REPLY.—(1) We are very sorry, but as repeatedly stated, it is impossible for us to say how the bees can be got out without a personal examination. (2) Next spring follow out the instructions given on page 149 of "British Bee-keepers' Guide Book" to transfer the bees.

[8785] *Unfertile Queens.*—(1) I hived a cast Thursday, 10th July, and on examining them on the following Thursday, 18th, I cannot find any sign of eggs in the combs, but the bees have started a queen cell. I have taken

the queen, which I am sending to you for examination. Please state in the next week's "B.B.J." the reason she is not laying, if any. (2) State what breed the queen is. I have just started bee-keeping. (3) I have united the bees to another stock, is this right?—L. P., Co. Durham.

REPLY.—(1) It is a pity you caught and sent the queen to us. She was a very nice virgin, and had you let her stay she would have been fertilized and commenced to lay very shortly. (2) She has Italian blood in her. (3) Having taken the queen away you did quite right to unite the bees to another lot.

[8786] *Amount of Food and Re-Queening.*—(1) Are two standard combs of sealed honey (both sides) sufficient to winter a strong stock on? (2) I have a 1912 queen. Ought I to replace her by a 1913 queen this autumn, or will it be good enough if I re-queen next year? I only have one hive at present. (3) Do the bees get any honey from potato blossom, and is it a fact that black bees can't get honey from the ordinary red clover? Thanking you in anticipation.—J. G. STREET, Ewell, Surrey.

REPLY.—(1) Two combs of food will not be sufficient for wintering. You should have at least eight. (2) It will be best to re-queen this autumn with a 1913 queen. (3) The hive bee does not work on potato blossom, neither can it reach the first crop of red clover, but it can work the second crop.

[8787] *Non-Swarming Bees.*—Thanks for your reply to my query (8654), June 26th. I thought by having made an artificial swarm, it would do away with the natural desire, especially as the season was well advanced, but on Wednesday, last week, I was away from home until after five o'clock, and upon going down the garden in the evening my wife called my attention to something hanging from a low bough of an apple tree. I went and examined it and found it was a fairly good swarm. I thought it was a stranger and was in luck, but it had issued from my new hive of June 17th. We promptly hived it in a new hive, taking a comb out of the one they issued from, and gave seven frames with new foundation; they have drawn these out. Last night I added two more, making ten in all. This last addition is the strongest of the three. Now, what has happened? The old queen was supposed to have been left in hive No. 1. Were two queens raised in No. 2, causing the swarm? Are there queens in all three hives. I failed to find her ladyship, being a novice. I think this state of affairs unfortunate, as it leaves me with three weak colonies. The bees were carrying pollen into No. 1 yesterday; they are all flying well. I suppose I shall have to feed the three lots through the winter.—J. T. B., Glinton.

REPLY.—We should say you took the old queen to No. 2, and as they became crowded by the addition of the extra bees, which you said went in, they prepared for swarming by rearing a queen. You will have a fertile queen in two hives, and an unfertile one in the other. You can stimulate by slow feeding from August, and at the end of September sufficient food should be given rapidly for the bees to store and seal for the winter. It will also be well to put on a cake of candy.

[8788] *Dealing with a Vicious Stock.*—I have a stock of bees which are very spiteful. It is a great task to take honey away from them, as they don't settle down again for two or three days. How can I destroy them and put some driven bees on their combs without killing the brood? I have a box which I put two second swarms in. Of course, the combs are fixed, as in a skep. I want to drive these bees, and put them on the frames in the hive after killing the vicious bees. You may say re-queen them with a good-tempered queen, but I am afraid they might sting neighbours. Cyanide of potassium is advised, but would this spoil honey and kill brood?—INQUIRER.

REPLY.—It is a great pity to kill bees now they are so scarce. Cyanide would kill the brood. We strongly recommend you to re-queen with one of a quiet disposition.

[8789] *Symptoms of "Isle of Wight" Disease.*—I have just begun to take in your JOURNAL, and find it most useful. Will you kindly inform me in one of your next numbers what are the symptoms of "Isle of Wight" disease in bees, and has it yet spread to this part of Essex?—K. D. G.

REPLY.—We cannot now spare space to repeat information which has been given time and again in our pages. Write to the Board of Agriculture, 4, Whitehall Place, London, W.C., for their leaflet on the disease, this will give you all the information you require. The disease has reached your part

Bee Shows to Come.

August 13th, at Wye, near Ashford.—Kent Honey Show, 12th Annual Exhibition. Classes to suit all bee-keepers. Splendid prizes; small entrance fees. One 6 guinea and two 5 guinea challenge cups; also a 2 guinea champion silver cup. A new class this year for six 1lb. of extracted honey, put up in short bottles, or other vessels, suitable for getting honey out of easily, and for sending honey away in. Open to United Kingdom. Two silver medals best exhibits of bee appliances. Twenty-five different classes to enter in. Staging and repairing carried out by experienced men. Prize schedule and entry form free on application to Mr. Alfred Lepper, secretary, Kent Honey Show, Scotton Street, Wye, Kent. Prize schedule and entry form will be sent to all exhibitors of last year without application.

August 19th and 20th, at The Dome, Brighton.—Annual Show of the Sussex Bee-keepers' Association, held in connection with the Brighton, Hove, and Sussex Horticultural Society's Summer Show. Six open classes for honey, including single bottle and section. Schedules from C. A. Overton, Hon. Sec., Beecroft, Crawley, Sussex.—**Entries close August 11th.**

August 20th, at Radstock.—Eighteenth Annual Show. Open class for honey. Schedules from B. M. Clark, Foxhills, Radstock, Bath. **Entries close August 16th.**

August 27th, at Chester.—Annual Show of the Cheshire Bee-keepers' Association, held in connection with the Cheshire Agricultural Society's Show. Several open classes, and good money prizes. Schedules from T. A. Beckett, St. Werburgh Chambers, Chester.

August 27th and 28th, at Derby.—Derbyshire Agricultural Society's Show. Bee and honey section under the management of the Derbyshire Bee-keepers' Association. Open classes for bee appliances and honey. Schedules from R. H. Coltman 49, Station-street, Burton-on-Trent. **Entries close August 21st,** not 15th as stated on schedule.

September 2nd, 3rd, and 4th, at Newcastle-on-Tyne.—The Northumberland and Durham Bee-keepers' Associations, in conjunction with the Durham, Northumberland, and Newcastle Horticultural Society's Show. Schedule from Hon. Sec., the N.B.K.A. Wooler; the D.B.K.A., Butterknowle; or Sec. of Horticultural Society, 24, Grainger-street West, Newcastle-on-Tyne.

Deddington Horticultural Society 5th Annual Flower Show, Tuesday, September 2nd.—Honey class open to the kingdom. Schedules from Mr. H. J. Harmsworth, hon. sec., Deddington. **Entries close August 28th.**

September 3rd, at Lancaster.—Lancaster Agricultural Society. In conjunction with the Lancashire B.K.A. Classes for honey, bee produce. Specials, including two silver challenge cups, two silver and one bronze medals. Write for honey schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 27th.**

September 4th, at Abington Park, Northampton. Northants B.K.A. Annual Honey Show. Special prizes for open classes, including one for single 1lb. jar. Entry free. Schedules from R. Hefford, Kingsthorpe, Northants. **Entries close August 28th.**

September 12th and 13th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes, with liberal prizes for appliances, extracted honey, sections, fitting-up frames, fitting-up sections, judging competition, &c., &c. Schedules from G. Hayes, Mona-street, Beeston.

Sept. 24th and 25th, at Kendal.—The Annual Show of Honey, Wax, and Appliances of the Cumberland and Westmorland B.K.A., in connection with the Northern Counties Fruit Congress, in the Market Hall, Kendal. Eleven open classes. Liberal prizes. Note.—All prize-money will be paid on second day of show. Schedules from G. W. Avery, Wetheral, Carlisle, or Geo. Chatham, Low Green, Staveley, Kendal.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

J. J. K. (Dorset).—*Number of Drones in Stock.*—It is not unusual to have the number of drones you mention in a stock.

D. C. A. (Langton Green).—If you read your "Guide Book" you will find on page 200, bottom paragraph: May is given as the best month for carrying out the transference of bees into clean hives. If the hive is very bad you might do it at the beginning of September.

Honey Samples.

J. Rose (Farnborough).—The sample is light, and an excellent one in all other points.

M. W. B. (Redenham).—The only comment we can make is that the light honey you send is excellent in every respect, and certainly worth showing.

B. Coleman.—Not much, it is spoilt with honey dew.

A. W. Randall.—No 1 is a good honey from white clover, worth 60s. per cwt. No. 2 is clover and lime, worth 56s. per cwt., No 3 is from mixed sources, has a little honey dew in it, worth 40s. per cwt.

Llandsillo.—(1) We do not think they will swarm. (2) Drive the top skep first and then the bottom one.

Suspected Disease.

J. T. (Buckley), S. Towns, J. C. Death (Notts.), G. E. Stone, and J. L. Morgan.—We are sorry to say it is "Isle of Wight" disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

SEND for trial bottle my I.W. cure, enough for one hive 1s. 3d., and cure your bees; it will repay you hundredfold.—RANDELL, Ixworth. v 28

WANTED, Rietsche Foundation Press.—Particulars to WIGLEY, Whitehill, Gravesend. v 27

HONEY, best sections, 9s. 6d. doz., cash with order.—R. COUSINS, The Rosary, Misterton, Gainsborough. v 20

LIGHT ENGLISH HONEY, 7d. lb. sample 3d.—HASTINGS, Welcombe, Stratford-on-Avon. v 21

PURE WILTSHIRE HONEY, 14lb. or 56lb. tins free, 58s. cash; 2cwt. carriage paid; bottles 8s. 6d.—HACKER, Crockerton, Warminster. v 22

SECTIONS and extracted honey for sale, sample 3d.—DAVID HANCOX, Deddington, Oxon.

6 FRAME Nuclei Carniolan, hybrid, brood in all frames, 1913 laying Queens, 15s. each; guaranteed healthy; boxes to be returned.—A. MAGSON, Kirkham, Lancashire. v 25

WANTED, one or two strong lots of driven bees, with Queen, guaranteed healthy; quote price and when delivered.—J. DRAPER, 2, Yew Tree Villas, Park Gate, Swanwick, Hants.

PURE CAMBRIDGESHIRE HONEY, 28lb. tins, 58s. 6d. per cwt.; sample, 2d.; cash with order.—J. YOUNGER, 51, Maid's Causeway, Cambridge. v 19

PURE CAMBRIDGESHIRE HONEY, sections, 8s. 6d. dozen; light extracted, jars, 9s. doz., 68s. cwt.; medium, 8s. 6d. dozen; 63s. cwt., f.o.r.; sample lb. jar, 1s.—HAWKES, Swaffham Prior, Cambs. v 17

FINEST light extracted honey, at 58s. per cwt., f.o.r.; sample, 2d.—SIMCOX, 17, Victoria-road, Fallings Park, Wolverhampton. v 2

WANTED, first grade sections; also extracted. —Price and particulars to Box XX., "Bee Journal" Office, Bedford-street, W.C.

5 CWT. finest light extracted honey, and nine dozen well filled sections, in card cases; what offers?—TREVISE, Dungeness, Kent. v 6

QUEENS.—1913 English black fertiles, 3s. 6d.; virgins, 2s.—ROPER, Thorpe-on-the-Hill, Lincoln. v 71

SURPLUS 1913 QUEENS.—Sladen's Carniolian hybrids, 5s. 6d.; blacks, 4s.; orders rotation. —WHEATLEY, Spa, Hinckley. v 78

WANTED, any quantity good sections honey; state price.—BOWDEN, Broomhill, Witley, Surrey. v 77

STRONG, healthy nuclei, on six frames, with four frames of brood and 1913 prolific laying queens, 15s. each; a few stocks for disposal, on ten frames brood with 1912 queens, 30s. each, guaranteed healthy, no disease of any kind in the district.—A. SHARP, Halstead Farm, Barrowford, Lancashire. v 56

3 STOCKS BEES, young, vigorous queens, healthy, packed free, 25s.—BERNARD SKINNER, Dereham, Norfolk. v 50

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

BEEMAN'S ELIXER, genuine "I.O.W." remedy, 1s. 6d.—BOWEN.

BOWEN'S SPECIALITIES.—Section cases, unapproachable; samples, 3d.; gross, 9s. 6d.—Coronation, Cheltenham.

HEALTHY DRIVEN BEES, with queens, 4s. per lot, cash and boxes with order; boxes sent to Hatfield Peverel Station, G.E.R.; all orders in rotation.—J. WHITE, Fairstead Hall, near Witham, Essex. v 18

DRIVEN BEES, healthy lots, 1913 Queens, 4s. lot; package returnable.—CADMAN, Codsall Wood. v 23

DRIVEN BEES, 6s.; queens, 2s. 6d.; foundation machine, 70s.—The Hurst, Kington, Worcester. v 14

HEALTHY DRIVEN BEES, 6s. 6d. lot, carriage paid; boxes returnable, cash with order.—G. A. GILLETT, Moreton-in-Marsh, Glos. v 15

SIX single, three double Conqueror W.B.C. and Cowan patterns, as new; special hybrids; large geared extractor, ripener, &c., once used; offers.—DAVIES, 14 Ynysgau, Merthyr. v 98

SECTIONS WANTED, glassed or unglassed, by HONIELADE CO., 23-25, Moorfields, London, E.C.

WANTED to purchase, one or two tons new English honey; quote lowest in bulk, or in tins; free with sample.—CHARLES C. WILLIAMS, LTD., 281, Broad-street, Birmingham. v 73

HEALTHY DRIVEN BEES, with queens, until August 10th, 5s. per lot; after, 4s. 6d.; boxes returnable; orders in rotation; cash with order.—T. PULLEN, Ramsbury, Hungerford. v 86

NOW IS THE BEST TIME to requeen by Snelgrove's method. Easy, reliable, profitable. 6½d.—SNELGROVE, Albert Quadrant, Weston-super-Mare; or "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 91

1913.—PURE imported Golden Italian fertile queens, guaranteed healthy, vigorous, prolific, 4s.; specially selected, 7s. 6d. each, prompt despatch.—J. B. GOODARE, Woden Apiary, Wednesfield, Wolverhampton. v 93

SECTIONS WANTED, any quantity, cash; also extracted.—F. W. WEITZEL, 21, Lonsdale-road, Kilburn, N.W.

NOW is the time to re-queen in order to produce young bees to strengthen stocks for winter.—Choice fertile tested English queens, excellent strain, safe arrival guaranteed; send for catalogue of up-to-date bee appliances. Winner of the first prize at Royal Shows, 1910, 1911, and 1912.—WILKES, Lichfield-road, Four Oaks, Birmingham.

1913 PURE FERTILISED CARNIOLAN QUEENS, 4s.; virgins, 2s.; safe delivery guaranteed, but not safe introduction. Orders executed in rotation.—FREDERICK VOGT, 63, Beresford-road, Canonbury, London.

BEAUTIFUL QUEENS, Sladen's, 5s. each.—OLIVER KNIGHT, Epney, Stonehouse, Glos. v 36

WANTED, new sections, glazed and unglazed, first quality, prompt cash.—CHILTON, Southdown Apiaries, Polegate, Sussex.

SECTIONS WANTED, best quality, for cash.—SMITH and CO., 17, Cambridge-street, Hyde Park.

SECTION GLAZING, extra fine quality, lace paper, neat pattern, white, 100 strips, 6d.; 300, 1s. 4d.; 500, 2s. 3d., post free; lace bands, 2⅛in., 3in. and 3⅛in. wide, 100, 1s. 2d.; 200, 2s. 3d.; 500, 4s., post free.—W. WOODLEY, Beedon, Newbury.

BRICE'S BRONZE MEDAL QUEENS (20th season). Special hybrids, 7s. 6d.; hybrids, 5s. 6d.; English blacks, 4s. 6d.; virgins, 2s. 6d.; safe delivery.—BRICE'S APIARIES, Green-street Green, Orpington, Kent.

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. Terms: Tea, bed, and breakfast, 3s. 6d.; or full board, 5s. per day.—HORSLEY'S, Merridale House, top of Castle Drive, Douglas, Isle of Man.

Editorial, Notices, &c.

GLAMORGANSHIRE B.K.A.

The Annual Show was held at Sophia Gardens, Cardiff, on 23rd and 24th July, in connection with the Cardiff and County Horticultural Society's Show.

The exhibits reached a high standard of excellence, the collection staged by Mr. Church deserving special mention. Mr. S. Jordan was the judge, and Mr. W. O. Jones gave demonstrations with bees to large and interested audiences.

Ten candidates were examined for the B.B.K.A. Preliminary Certificate by Mr. Jordan.

The glorious weather, together with the charming surroundings of the grounds, contributed to the success of the show, which afforded an opportunity for novices to obtain information on the new methods of managing bees, and examining some of their products.

The awards were as follows:—

Twelve 1-lb. Sections.—1st, Sam Lewis, Bridgend; 2nd, David George, Merthyr Mawr; 3rd, John Rees, Lisvane.

Two Shallow Frames of Comb Honey.—1st, W. T. Gunter, Cowbridge; 2nd, E. Church, Cardiff; 3rd, R. Morgan, Cowbridge.

Six 1-lb. Jars Extracted Honey (Light).—1st, W. T. Gunter; 2nd, R. Morgan; 3rd, D. George.

Six 1-lb. Jars Extracted Honey (Medium).—1st, R. Morgan; 2nd, W. Dyche, Cardiff; 3rd, Thos. Jones, Nantgarw.

Six 1-lb. Jars Extracted Honey (Dark).—1st, Wm. Morgan, Llantrisant; no second; 3rd, R. Morgan.

Beeswax.—1st, D. George; 2nd, R. Morgan.

Articles of Food Containing Honey.—1st, W. T. Gunter; 2nd, R. Morgan; 3rd, Thos. D. Richards, Whitchurch.

Honey Beverage.—1st, Wm. Morgan; 2nd, Thos. D. Richards.

Bee Candy in Cakes.—1st, W. T. Gunter; 2nd, E. Church.

Observatory Hive, with Live Bees and Queen.—Equal 2nds, S. Wakeford (Dinas Powis) and David Hardcastle, Lisvane.

Six 1-lb. Sections.—1st, Thos. Davies, Kenfig Hill.

Six 1-lb. Jars Extracted Honey.—1st, Thos. Davies; 2nd, Wm. Morgan; 3rd, Jas. Evans, Llantrisant.

Six 1-lb. Sections.—1st, D. Hardcastle.

Six 1-lb. Jars Extracted Honey.—1st, E. Lawrence, Ewenny; 2nd, Wm. Dyche.

Collection of Honey and other Bee Products.—1st, E. Church (recommended for special mention to B.B.K.A.).

1-lb. Section of Honey (not granulated).—1st, R. Morgan; 2nd, A. Bowen, Cheltenham.

1-lb. Section of Honey.—1st, D. George; 2nd, Sam Lewis.

Collection of Appliances.—1st, John Hibbert and Sons, Cardiff.

Twelve 1-lb. Sections.—1st, D. George; 2nd, Sam Lewis; 3rd, A. H. Powell.

Twelve 1-lb. Jars Extracted Honey (Light).—1st, A. C. Jackson, Thetford; 2nd, E. Church; 3rd, W. T. Gunter.

Beeswax, not less than 2-lb., in retail form.—1st, S. Wakeford; 2nd, D. George; 3rd, E. Church.

Six 1-lb. Jars Extracted Honey (Light).—1st, S. Wakeford; 2nd, W. T. Gunter; 3rd, W. T. Richards, Cardiff.

Six 1-lb. Jars Extracted Honey (Dark).—1st, A. H. Powell; 2nd, R. Morgan.—*Communicated.*

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of July, 1913, was £6,242.—From a return furnished to the BRITISH BEE JOURNAL, by the Statistical Office, H.M. Customs.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

HOW TO DESTROY COLONIES OF BEES.

This is a problem which, although apparently very simple, is difficult to carry out successfully, not only by the novice, but also by bee-keepers of long standing, as they may have never had to practice it on account of their apiaries keeping free from disease.

Unfortunately for the industry, the "Isle of Wight" disease has been the cause of the slaughter of thousands of colonies during the past few years. This disease, as all know, is much more to be dreaded than foul brood, which, if affecting strong colonies, can be cured without the necessity of destroying the bees, while with "Isle of Wight," no matter how strong the colony, destruction upon the first signs of the disease is the only safe course to follow.

Ask the average bee-keeper: "How would you destroy a colony of bees?" and the answer comes quite glibly, "By sulphuring them." Ask again, "How

would you do it in the case of a frame-hive?" He thinks for a moment and then either looks dumbfounded or suggests the brimstone pit, as used by the skeppist. Suggest to him that the period of the year is June, when the bees will be running about on the floor-board all night and not clustered in a mass on the combs (as is the case on cold nights in September) so that when the brood-chamber is lifted from the floor-board some of the bees are bound to escape, and although normally odd ones left out all night are supposed to, and do, as a rule, perish, these being germ-carriers and a source of danger, will most probably live to enter other hives the next day. To deal with disease successfully, not a single bee must escape.

The easiest method of destruction is by means of cyanide of potassium, the one drawback being its deadly poisonous nature, and in consequence difficulty in procuring it. The method of using it is as follows:—Take an ordinary medicine bottle and put into it for each colony to be destroyed a piece of cyanide about ½in. in diameter and one ounce of water. This should be allowed to dissolve, a rather slow process, unless the bottle is shaken frequently. Care must be exercised to keep the bottle corked so that the fumes do not escape, and the solution should be made up just before using, for if left about a fatal dose may be drunk in mistake by some person. Warm water will facilitate the melting of the cyanide, which should never be used either in the hive or in wasp nests in the solid form.

In the daytime see that the quilts fit down neatly over the frames in the condemned hive, and close the entrance to about a couple of inches. At night put a spadeful of damp earth over the entrance, and pat it down solid, so that neither bees nor fumes can escape. Turn back a corner of the quilt just sufficiently to allow the bottle mouth to be inserted, and pour an ounce of the cyanide solution in, then carefully replace it. Each hive to be destroyed is treated in the same way. In from ten to fifteen minutes all the bees will be dead, and both they and the combs, &c., can be dealt with as described later. The moment the last colony has received its dose, put the bottle on the ground and smash it to fragments, so there is no danger of its being used for other purposes.

Wasp nests can be destroyed by simply pouring an ounce of the solution in at the entrance of the nest. It is not even necessary to stop up the hole.

Another method of destroying bees is by means of sulphur fumes, the difficulty being to get the sulphur to burn unless some inflammable agent is used with it, therefore, the best way to do this is to prepare a sulphur squib. As a boy, being too young to be allowed to use gunpowder, I have taken hundreds of wasps nests, to obtain the grubs for fishing, by this means.

To a saucerful of hot water add one tablespoonful of saltpetre, and stir until dissolved. Now obtain brown paper of medium thickness, and with a rough surface (not glazed). Cut it into strips four inches wide and five inches long. For each squib soak the paper well in the saltpetre solution, and allow it to dry, then take a lead pencil, roll a strip of the paper tightly round it and tie with string at about inch intervals, to keep it from unrolling. Withdraw the pencil, close one end of the paper roll with a paper plug, fill up the space left by the pencil with powdered sulphur, and plug the other end. The saltpetre paper, or, as we called it "touch paper," is bound to burn when lighted, and cannot be put out, so that the sulphur is burnt as well. The entrance to the hive is stopped up, as described above, at night, and the lighted squib pushed in between the frames after raising the quilt.

After destroying the bees, by either method, the next process is to burn the combs in such a manner that no danger of infection lurks behind from spilt honey or burnt wax. If a greenhouse or other furnace is handy, it is an easy matter to dump the combs, bees, quilts, &c., into the furnace. An attempt to burn them on an indoor fire will result in trouble with the women folk, on account of the terrible mess which is made. If burnt on a bonfire, no matter how carefully the work is carried out and the ground dug over afterwards, there is bound to be some of the honey which has run away during the burning, left behind to be picked up by other bees, and disease carried home in this way. In the majority of cases the open garden is the only place available for burning, and the following is a simple and effective way of carrying out the work. Dig a hole in the ground a yard in diameter and eighteen inches deep, put a little straw in the centre, and rear the combs up on end round this, putting all the dead bees, debris, and quilts on the top. Light the straw and all will be consumed; the hole is then covered in so that all danger from the honey which has run out or not been burnt is avoided. In the case of "Isle of Wight" disease all the dead and dying bees on the ground near the hives should be swept up and burnt. If the hive stands upon grass this should be sprayed with petrol and lighted, so that the dead bees are consumed. The work of burning should be carried out at night, so that other bees are not attracted.

It is not worth while trying to save the frames, which is done in many instances; these cost such a small sum that it is much

better and cheaper to burn them and buy new ones.

The hive is disinfected by means of a painter's blow-lamp, the interior surface being gone over carefully and just slightly charred, so that all the microbes are destroyed. Failing a blow-lamp, paint the inside of the hive with petrol or paraffin, light, and let it burn until the interior surface is well scorched, then smother out by means of a damp sack. If either of these processes is employed the hive can be used again as soon as it is cool, *i.e.*, in about a quarter of an hour. With liquid disinfectants it is necessary to wait until the hive is dry; this necessitates waiting for several days. Honey from stocks affected with either "Isle of Wight" disease or foul brood is quite fit for human consumption, but great care must be taken not to expose it at all, so that robber bees obtain access to it. Where cyanide of potassium is used to kill the bees the honey must not be used, as it is then poisonous.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BEE NOTES FROM DERBYSHIRE.

[8778] I have just returned from visiting a bee-man of the old type, one who has steadfastly refused to join our local association. In my mind I have been taken back at least fifty years. In the old garden attached to his cottage bees have been kept for generations, and wherever else superstition may have died out, it will have a resting-place here until the old man dies. It appears that a few months ago his wife passed away. In telling me that the season had only been moderately successful, he explained it so far as his own bees were concerned by saying, "But then, they never work well after a death in the family!" Wishing to condole with him I remarked, "But surely you told them all about it." "Yes," was his reply, "but they couldna' ha' bin listening."

Wishing to see how far his superstition went, I suggested that he ought to have hung each hive with crape. He agreed, allowing that it was an oversight on his part. This in a district where I thought all superstition was dead. I shall be sorry to see the last of this type of bee-keeper, for undoubtedly much that is picturesque will have gone.

I came away the owner of a good swarm, which had managed to entirely fill a large skep with comb, containing from 30lb. to 40lb. of good honey. This skep is now to be transferred to a frame hive. I have driven the queen and some of the bees out, confining her below the queen excluder of the frame hive, while the skep is left above for the brood to hatch. In the course of a few weeks I hope to try my hand at extracting combs and honey from a skep—a process of which I have had but little experience. By the way, Mr. Editor, supposing the honey is of quality good enough for showing, can I show it as my own production, seeing that it was gathered in another district?

[The skep and honey are now yours, so you can show it.—EDS.]

On Saturday last, Aug. 2nd, I took three stocks to the moors. I have marked down the date as a red-letter day in my diary, because then for once in the year I rose early. It was no case of "Call me early, mother dear," but of my own exertion and without an alarum I got up at 3 a.m. The hives had been packed overnight, and before 4 o'clock they were on the dray, and I had taken the reins for a fifteen mile drive. This year, by the way, I adopted a new system of packing. I placed perforated zinc over the entrance as I had done before, but instead of placing a sheet of zinc above the combs, I simply spread a piece of cheese cloth over all and then rammed down the lift, holding all tight. The idea worked well, and with the same type of hive—single walled—I shall try it again.

I need not dwell on the glorious early morning drive, suffice to say that I arrived at the moorland farm before the farmer and his family were about, and that before 8 o'clock I had unpacked all bees, put them on their stands with supers in position, and, after having had a delicious breakfast of home-made bread and farm-fed bacon, was ready for the return journey. One of my stocks, which I had taken from a fifteen frame combination hive, I found to be too strong to travel in a ten framer, so I had been obliged to split it, carrying half of it in a travelling box, to be united when on the moor. But when I arrived there I found that I had forgotten my veil, as likewise had my friend who accompanied me, and all operations had to be conducted without that safety appliance. Let it be put on record here that my friend, who will, I think, see this, judged discretion to be the better part of valour, and whilst I undertook the executive duties, he managed the administrative part admirably from the opposite side of the field.

However, no great harm was done, the bees being pretty well demoralised by their rude shaking on the road. Altogether it was a most successful journey, and it only remains for the bees and the weather to do their part. I have had various experiences in the past, of which I may write more later, but from them I have been able to gather a store of valuable experience, valuable none the less because often it has been costly.

The clover season in the lower districts has, I should say, been a very fair one; I hear few complaints. For my own part my stocks were backward for the reason I stated some few weeks ago, but they came along splendidly, and I was able to take advantage of the later part of the clover bloom. I have not taken all my honey yet, but what I have is of good quality. Limes have not quite ceased to yield, and not far away a careless farmer has left me a good crop of late charlock amongst his swedes, of which my bees have not been slow to take advantage. I passed through the field the other day, and the effect on me was exhilarating. Above the sun was shining, and amongst the flowers, making the most of the warm day, were thousands of bees. All over the field, wherever I stood, it seemed from the busy hum as though I was standing in an apiary of a hundred stocks. Every spike of flowers appeared to have a visitor. I have never seen anything like it before. When I take all my honey, I must certainly try to sell that farmer a jar.—D. Wilson.

BLURTS FROM A SCRATCHY PEN.

DO BEES PAY?

[8779] One of the most common grumbles an expert hears, or alternatively, one of the most common questions he is asked, is, "Do bees pay?" The enquiry, as a rule, does not come from the right sort of bee-keeper, but it comes from the listless individuals who are never thorough, and, moreover, the example of this phase of humanity generally accompanies it with an apology "that he would keep bees if they did not sting." The "stingless bee" has never yet been invented, and I am quite safe in saying it never will be. So we need not look to that class of folk for recruits. I am tempted to say we do not want them. They will keep bees for a twelvemonth and then "chuck them up," having changed their hobby to something less dangerous. But the men we welcome to our ranks are those who do not keep bees as "pot-boilers," who have a real love for the pursuit for its own sake, and grit enough to accept a stinging when it comes their way. And why? Because in a well-stocked colony there may be anything between thirty and a hundred pounds of most sweet and delicious food much sought after and devoured by many enemies, which I am not going to make a list of, but summarise by saying the bear as the bulkiest and the ant as the smallest of them. Nature is no fool! Having instructed these little insects how to collect the nectar from the fields and to harvest it for their winter support, she also gives her servants the means of defending their stores against those "who toil not, neither do they spin." Therefore a stingless bee is an absurdity only possible when the lion shall lie down with the lamb and the sword shall once and for ever be turned into the ploughshare.

Now, it would almost seem as if I were going to enunciate a paradox. It almost amounts to saying, but it is not quite so, that if you want to succeed, don't try to. Perhaps a happier and more comprehensible way of stating the proposition is: We are all vain glorious mortals, most of us exceedingly selfish, and throughout whatever we do runs the hope that we shall see our names in the papers, or we shall accumulate a pile of "shekels." Now, the best way to accomplish this desired object is just to forget it altogether—work for a higher motive. If a painter, a musician, or a scientist prostitutes his intellect to money, the very sin punishes itself, and he never rises out of the mediocre; but if he has the courage to "cheek" Dame Fortune as represented by the man who could buy his brains, to say, "I myself best know my ideal," it is very probable he will succeed both in gold and kudos. Now, applying this to apiculture, if anyone thinks he is going to sweat the labour of his bees to get the highest possible return of money out of the lowest possible expenditure of capital, time, and trouble, his bees are not going to pay. They will "strike." They will not "come out," nor will there be a "lock-out." No! Although they are all females, and could act admirably the part of a militant suffragette (as we all well know), these will not be the tactics they will use; theirs will be a simple "passive resistance," a most complete "hunger strike."

Now, having outlined "How not to do it," how the wicked and grinding capitalist would go to work, let us, as a contrast, review the other side of the picture—that is, "How to make bees pay."

Obviously, the very first thing that must be done is to provide suitable homes, proper and necessary appliances, and finally, and most necessary of all, suitable pasturage. This, of course, means an outlay proportional to the extent of the

venture. The purport of this and my next articles is not to describe or advise on these appliances; that has already been done by many others to perfection. What I am endeavouring to advocate is reasonable generosity in this expenditure, avoiding niggardliness as suicidal, to elevate oneself above the low, sordid view that bees are merely animate machines, the best available for gathering honey, and to realise that there is in this pursuit a most enthralling study for the man of intellect, both as to the insect itself and its products—a study which never tires and never finishes. I maintain that if bee-keeping is taken up with this purpose, the high-grade motive, not the low-grade, bees will pay well—and prove possibly the most lucrative investment capital is put into. I further maintain that this is the only possible way to conduct profitable bee-keeping. Of course, it may be said this is all very well in theory—give us something practical. In an early article, therefore, I hope to give a few ideas, to throw out a few suggestions, as to how accounts may be kept, so that each may see how his bee business conducts itself.—Jno. Smallwood.

A CURIOUS OLD OBSERVATORY HIVE.

[8780] Referring to the communication under the above heading (page 305) "B.B.J.," of 31st July, I should like to state as a matter of bibliographical interest that "Hints for Promoting a Bee Society" was published anonymously by Darton and Harvey, London, 1796. The author of this well-printed tract, which consists of twenty-two pages, 8vo. and a plate, was Dr. John Coakley Lettsom, a physician of some note, who took great interest in natural history, and contributed many letters to the *Gentleman's Magazine* in his own name and under pseudonyms. Born in the West Indies in 1744, he practised there and also in London and Edinburgh. He died in 1815.

It was owing to these "Hints" that the earliest English Bee-keepers' Association, the Western Apiarian Society, was formed in 1799, Dr. Lettsom being one of the first to join it.

The MS. reproduced in "B.B.J." is a word-for-word extract from the tract, with the exception that in the latter there is no mention whatsoever of Mr. Lover. The original plate, entitled "Plan of a Colony of Bees," is more complete.

It is unfortunate that "E. B. B." can tell us nothing of Mr. Lover. The date given being fifteen years later than that of Dr. Lettsom's tract, one would be disposed to assume that Mr. Lover constructed his "beautiful and lofty pyramid" in accordance with the doctor's plate, in which the figure is drawn to a scale of feet duly supplied.—H. J. O. Walker, Lieut.-Col., Leeford, Budleigh Salterton.

CO-OPERATION AND MARKETING IN IRELAND.

[8781] English readers of the Irish "Bee-keepers' Gazette" probably have the impression that one of the many policies of that journal is to foster and encourage the industry of bee-keeping in Ireland and to help members of the association and subscribers to dispose of their honey.

The following extract from the "Bee-keepers' Gazette" of October, 1912, shows that such help would be appreciated, and indeed is a vital necessity if the industry is to flourish in Ireland.

"The I.A.W.S. have quoted me 4d. for run honey, if you please. What about that Market Committee?"

The I.A.W.S. is one of the largest, if not the largest, buyers of honey in Ireland, and as 4d. was the best price they were offering, in what could not be called a bumper year for honey, it is evident that all was not well with the bee-keeping industry in Ireland.

Prompted by the earnest wish of correspondents and subscribers for marketing and co-operative facilities, it occurred to me that the Editor of the journal might be glad to give a practical proof of his interest in the industry by putting me in communication with some of those Irish bee-keepers who were finding their honey a drug on the market. The "Bee-keepers' Gazette" is published monthly, and as I could not wait until the next issue I wrote the Editor as follows:—"Dear Sir,—I should be extremely obliged if you would put me in communication with some Irish bee-keepers who can supply first-grade sections, as I could place 20/30 dozen if quality and price is right. They would, of course, have to be carefully packed and delivered here in good order."

This appeared to me to be a business-like offer, and one which might reasonably have been handed over to some of those secretaries of associations whose members had honey to dispose of; failing that, I suggest that the offer deserved a courteous reply. However, the Editor thought differently. Marketing and co-operation for the moment had been shelved, and in a willing buyer he could only see an attempt to save 6d. at the expense of his advertising department:—

"We regret that we cannot undertake free agency work of the kind. Our advertising columns are open to you and it is

only in that way that our publications may be properly used for trade purposes."

Can one wonder at the industry in Ireland being in such low water when the Editor of its journal deliberately rebuffs a willing buyer in this flippant and discourteous fashion? Probably that very moment his waste-paper basket was full of appeals from subscribers asking to be put in touch with purchasers.

I was fortunate, however, in finding elsewhere the courtesy denied me by the editor, and purchased a considerable quantity of honey at an average price of 25 per cent. more than was being offered by the largest buyer in Ireland. I do not pose as a philanthropist. I paid a fair price and got a first-rate honey.

It is interesting to contrast with this method of encouraging the industry that of the Editors of the "B.B.J." and the "Record" here in England. In 1911 I had a large crop and wrote the Editor of the "Record" asking if he could put me in touch with a buyer. By return of post I had the name and address of a firm, and within a week had sold them 8 cwt. in one lot!

The conclusion is inevitably forced upon one that the Editor of the "Bee-keepers' Gazette" is so occupied in looking for opportunities of pin-pricking and fault-finding in connection with the conduct of bee affairs in England that the interests of his own flock are completely neglected.

Surely it is time that a sane policy was adopted, and, instead of theories and incessant vitriolic attacks on those who have shown that they have the interest of the industry at heart, an attempt be made to close the ranks and consolidate the industry in the British Islands, so that we may present an unbroken front to the ever advancing importation of foreign honey.—A. MacCullah.

[We are not surprised at our correspondent's complaint, for we know also through others that the organisation of the industry in Ireland is non-existent. Nor should we expect anything different from the editor of the paper mentioned, who is an adept at blowing his own trumpet, even at the expense of others. Is there a greater sham than the *Bee-keepers' Gazette*, which in reality is the *Irish Bee Journal* under another name, and as a bait to catch English bee-keepers a few lines of reports of one or two English Associations, supplied by the editor's henchmen in this country, are given. The bait has evidently not had the desired effect, hence the pin-pricks, which, however, are harmless and beneath notice, but they are intended to please the few for whom the editor is evidently catering. Although the issuing under another name of the paper mentioned only commenced a couple of years ago, we wonder what our readers will think of the veracity of the editor in stating on the first page of the current number that it is Vol. XII. Further comment is needless. Our own policy is different, and we can look back with satisfaction to the fact that we have been able to assist many of our readers in finding a market for their honey, when it was of good quality, and in a recent case three tons were sold through our instrumentality, without advertising in the papers at all. All over Ireland last year bee-keepers were bewailing the fact that they could not sell their honey, while here twice as much could have been sold. A recent visit of our correspondent to Ireland has confirmed this view, and as he is an Irishman we thank him for bringing the matter to our notice, and are pleased to publish his letter as showing the sort of help bee-keepers may expect from bee publications in that country.—Eds.]

INDISCRIMINATE TASTING OF EXHIBITS AT SHOWS.

[8782] May I appeal to Secretaries and their Committees to try and give more protection to the honey at shows, by having cards placed about the honey tent, "Please do not touch the exhibits," for the public and bee-keeper especially think they have a right to taste all prize exhibits. At York, on July 23rd, I lost the 1st prize for light honey because I had not filled the jars up after they had been to another show, where someone had been feasting at my expense. Although they contained 1lb. of honey, they were 18oz. jars, and not being full the judge said with truth they did not look well.—J. Pearman, Derby.

[We thoroughly endorse Mr. Pearman's remarks, and would call the attention of Secretaries and Stewards to the matter. On page 16 of "Producing, Preparing, Exhibiting, and Judging Bee Produce" is a photograph of an exhibit of granulated honey damaged in this way. —Eds.]

REMOVING BEES FROM A TREE.

[8783] In your issue of August 7th, a correspondent (page 317) asks how to remove bees from a tree. Will you permit me to remind him of two main principles that will be useful, which are as follows:

1. Any stock of wild bees in a neighbourhood is a menace to the bee-keeper, therefore it is to his advantage to destroy them as a stock. If he can save the bees alive for his apiary, that is an extra gain; but it is quite a minor one compared with the destruction of the nest. The

value of bee-life, therefore, should be sternly disregarded: gloves should be worn and brute force used.

2. Except under unusual circumstances, the comb (all of it) must be got out first; and when this has been done, the bees can be herded together and dealt with in their turn.

If "J. F. R." cares to send me his address I will endeavour to explain things more fully in a letter, for which it would be impossible to find room in your JOURNAL. He must bear in mind that, without seeing the tree, my advice can only be general.—HERBERT CAMPBELL, The Grange, Pulham St. Mary, Norfolk.

LYSOL FOR "ISLE OF WIGHT" DISEASE.

[8784] May I give my experience with a remedy called "Lysol"? My attention was drawn to it by the wonderful and rapid way in which it once cured a bad carbuncle on my neck. I immediately thought, why this is the best antiseptic the world has ever been blessed with, and being a bee-keeper of very long standing, I tried it on bees.

A full month ago I gave my assistant a good and healthy swarm of bees, also a hive. He located them at his own home, and for a time they progressed satisfactorily. One morning he reported their behaviour as remarkable, and I found the trouble was "I.O.W." disease. I gave him two pieces of a good and much-used remedy, but it did not cure. I then told him to saturate a piece of wood, not too large, with Lysol. He put this into the hive (the wood of the inside of the hive was painted), and very soon he reported that the brood had hatched out, and the swarm appeared to be all right.

I have not tried it much on my own bees, but I syringed one stock, bees and all, with one teaspoonful of Lysol to a gallon of water. This seemed likely to kill the bees, so I tried two gallons of water, as less likely to be injurious, unless, perhaps, it is too strong for unsealed brood. The safer plan is to saturate a small flat piece of wood and drop it in the hive near the back or on the floor board, and allow only the vapour to permeate the hive.

I have an instinctive feeling that a remedy has been found for all the ills that bee life is heir to: but wait and see is, perhaps, the best policy.

Lysol can now be bought at any good chemist's at 1s. per bottle. I hope some who have disease in their apiaries will try it and report.—F. V. HADLOW

Queries and Replies.

[8790] *Cleaning Wet Combs.*—Will you kindly tell me (1) when shallow frame supers are removed at end of season and extracted, how are the frames to be treated as regards thoroughly cleaning and disinfecting before putting away until next year? If put back in the hive over a Porter escape, will not the bees commence to again fill them, and if put back, how long should they be allowed to remain? (2) I have given my bees sulphate of quinine in their drinking water, as suggested in previous issues of the JOURNAL. My chemist tells me that not less than one drop of sulphuric acid is required for each twelve grains of quinine to dissolve it satisfactorily. Can the quinine be combined with Napthol Beta in making autumn syrup? Is the excess of sulphuric acid likely to do any harm? (3) About what is the average date when supers should be removed in this district (Middlesex)?—G. F. H., Stanwell.

REPLY.—(1) If you leave only the small hole open the fact of the super being nearly cut off from the rest of the hive will cause the bees to carry the food below. You can disinfect with Formaldehyde by putting an empty super on the floor, inside which stand a vessel containing 2oz. of a 10 per cent. solution for each four supers, which are stacked on the top with a porous covering over the uppermost one. A piece of common washing soda placed in this will make the gas come off better. Allow the supers to stand thus for about three months. (2) If you follow Mr. Wigley's instructions you will not go wrong, as he has experimented extensively with it. (3) About the end of July.

[8791] *Transferring Bees from a Box to Frame Hive.*—I have been approached by a friend who wants me to buy a swarm from him, as he does not want to destroy it, and I think myself it would be a shame to do this, as the bees appear strong and healthy. As the owner was short of hives he simply hived the swarm in a box, and consequently the latter is one mass of comb. We reckon there must at least be 25lbs. of honey in the comb. The bees are located about a quarter of a mile away from my house. (1) Can I have them removed to my place?; and (2) is it possible to put them in a "W.B.C." hive with proper combs, &c., or is it too late for this? Kindly let me know in an early issue.—O. T. J., Prestatyn.

REPLY.—(1) If your friend lived more than two miles away you could move the bees at once, but under the circumstances

it would be much better to leave them where they are until, say, December. (2) Leave the bees in the box until next spring and then deal with them as described on page 149 of "British Beekeepers' Guide Book."

[8792] *Uniting Stocks for the Moors.*—I have a strong stock which swarmed a month ago. Another stock swarmed the same day, so I decided to hive the two swarms together. When I went to hive the second swarm I found it had flown away, so I decided to put the first swarm where the stock had been, removing the latter twenty yards away. Would it be practicable to unite these two colonies to send to the heather, and if so, how should it be done? I have never sent bees to the heather before, it is ten miles away. Would they require attention, or only just taking there and bringing home when the season is over? The weather has been very unfavourable, so I have got very little honey this year, much less than last, so I should like to get some heather honey.—A. C., Lancashire.

Reply.—If both lots of bees are strong we should not unite them, but take them to the moors as they are. If you desire to unite them remove all combs not covered by bees and without brood, from each hive. Cage the best queen, killing or disposing of the other. Late in the evening when the bees are going to be taken away, dust both lots with ordinary flour and interspace the combs in one hive and pack up. Upon arrival at the moors release the queen and put on the supers. No other attention will be necessary until the super is ready to come off and the bees are brought home.

[8793] *Spacing of Super Combs.*—I am desirous of making up some sets of extracting combs, will you kindly tell me what is the correct spacing for the same? I am just fixing in the drone base foundation and wiring, and it struck me whether, if I put the $1\frac{5}{16}$in. metal ends on these frames the bees would draw them out regularly, or be inclined to work them any how: or should I use a narrower spacing until the combs are drawn out? I am using $1\frac{1}{4}$in. wide frames. Are the $1\frac{5}{16}$in. wide metal ends the best for extracting combs?—J. H. Brown.

Reply.—We fear it is rather late in the season to get the combs built out. Put on the $1\frac{1}{2}$in. metal ends for the combs to be built out, and when this is done use the wide ends.

[8794] *Keeping a Swarm in a Skep.*—(1) I have had a swarm of bees in a skep for five weeks; would you kindly tell me if I can move them into a frame hive, or shall I leave them till next spring? (2) If they are to be kept in the skep, should I pull the bung out, and put another skep over the old one to give more room? (3) Yesterday I noticed some of them carrying out dead young bees. Have they got a disease? I enclose a specimen. —E. A. Elkins.

Reply.—(1) You must let them remain until next spring, and then transfer them as described in the "Guide Book." (2) If they build comb and store sufficient food to last them the winter, you must be satisfied; they will not give you surplus this season. (3) The grubs carried out show that the bees are short of food. You must feed them, this justifies our answer to No. 2.

[8795] *Using Apicure.*—Will you please answer a few questions in Bee Journal? (1) How does the diseased brood appear when Apicure has checked it? (2) Do the bees bring affected brood out of the hive? (3) Do you think the Carniolian Bee would repel the disease better than the English bee?—C. E. Smith.

Reply.—(1) When Apicure has checked the disease there is no further decomposition. (2) The bees will carry out the affected brood. (3) The Carniolian bee is no more immune from disease than the British bee.

[8796] *Value of Honey.—Robbing Disinfected Hives.*—(1) I enclose a sample of this season's honey, and should be much obliged if you would give me your opinion in the Bee Journal of its quality and the price it should fetch wholesale. (2) After removing the supers I tried Mr. J. Lee's plan [8738] of transferring diseased stocks into hives dressed with Ayles' cure. This was done two days ago, and one hive in particular has been violently attacked by robbers ever since, although it was a strong stock. The curious thing is that the weakest of the four stocks transferred is not being attacked. But under the circumstances I am afraid to try this treatment with any more hives. Can you suggest any reason for what has happened?—A. D. G.

Reply.—(1) The honey is of excellent quality and worth from 60s. to 70s. per cwt. (2) Robbing will occur at times after the use of Ayles' cure, for what reason we are unable to say.

Bee Shows to Come.

August 19th and 20th, at The Dome, Brighton.—Annual Show of the Sussex Beekeepers' Association, held in connection with the Brighton, Hove, and Sussex Horticultural Society's Summer Show. Six open classes for honey, including single bottle and section. Schedules from C. A. Overton, Hon. Sec., Beecroft, Crawley, Sussex.—**Entries closed.**

August 20th, at Radstock.—Eighteenth Annual Show. Open class for honey. Schedules from B. M. Clark, Foxhills, Radstock, Bath. **Entries close August 16th.**

August 27th, at Chester.—Annual Show of the Cheshire Bee-keepers' Association, held in connection with the Cheshire Agricultural Society's Show. Several open classes, and good money prizes. Schedules from T. A. Beckett, St. Werburgh Chambers, Chester.

August 27th and 28th, at Derby.—Derbyshire Agricultural Society's Show. Bee and honey section under the management of the Derbyshire Bee-keepers' Association. Open classes for bee appliances and honey. Schedules from R. H. Coltman 49, Station-street, Burton-on-Trent. **Entries close August 21st,** not 15th as stated on schedule.

September 2nd, 3rd, and 4th, at Newcastle-on-Tyne.—The Northumberland and Durham Bee-keepers' Associations, in conjunction with the Durham, Northumberland, and Newcastle Horticultural Society's Show. Schedule from Hon. Sec., the N.B.K.A. Wooler; the D.B.K.A., Butterknowle; or Sec. of Horticultural Society, 24, Grainger-street West, Newcastle-on-Tyne.

Deddington Horticultural Society 5th Annual Flower Show, Tuesday, September 2nd.—Honey class open to the kingdom. Schedules from Mr. H. J. Harmsworth, hon. sec., Deddington. **Entries close August 28th.**

September 3rd, at Lancaster.—Lancaster Agricultural Society. In conjunction with the Lancashire B.K.A. Classes for honey, bee produce. Specials, including two silver challenge cups, two silver and one bronze medals. Write for honey schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 27th.**

September 4th, at Abington Park, Northampton. Northants B.K.A. Annual Honey Show. Special prizes for open classes, including one for single 1lb. jar. Entry free. Schedules from R. Hefford, Kingsthorpe, Northants. **Entries close August 28th.**

September 12th and 13th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes, with liberal prizes for appliances, extracted honey, sections, fitting-up frames, fitting-up sections, judging competition, &c., &c. Schedules from G. Hayes, Mona-street, Beeston.

September 13th, at Conway, North Wales.—Annual Honey Show in connection with the Conway Honey Fair. The Conway Honey Fair has been annually held for centuries. Great opportunity for visiting one of the most historical districts of Wales. Open and local classes. Special prizes. Schedules from J. Hughes, Town Hall, Conway. **Entries close September 9th.**

September 20th to 27th, at Royal Agricultural Hall, London.—Twenty-first Annual Exhibition of the Grocery and Allied Trades Honey Section under direction of the British Bee-keepers' Association. All open classes. Special prizes (see advertisement). Schedules from H. S. Rogers, Secretary, Palmerston House, Old Broad Street, London, E.C.

September 24th, at Altrincham.—Honey Show, under management of Cheshire Bee-keepers' Association, in connection with Altrincham Agricultural Society's Show. Four open classes. Schedules from J. H. Hall, 1, Market Street, Altrincham. Secretary. **Entries close September 6th.**

Sept. 24th and 25th, at Kendal.—The Annual Show of Honey, Wax, and Appliances of the Cumberland and Westmorland B.K.A., in connection with the Northern Counties Fruit Congress, in the Market Hall, Kendal. Eleven open classes. Liberal prizes. Note.—All prize-money will be paid on second day of show. Schedules from G. W. Avery, Wetheral, Carlisle, or Geo. Chatham, Low Green, Staveley, Kendal.

TO OUR READERS.

For the past few months we have been inundated with letters asking if it is not possible to issue in book form the articles which have appeared in our pages from the pen of "D. M. M." and also "Helpful Hints for Novices." The production of a book is both risky and expensive. We shall therefore be pleased to hear from our readers to what extent the books would be supported if published.

Notices to Correspondents.

W. GOLDSMITH (Knowle).—*Stingless Bees.*—We thought the canard of a "stingless bee" had died a natural death. The cross you mention would not give a stingless, but a very "stingy" bee, as anyone who has had experience of hybrid bees will tell you. Unfortunately we have people in this country who can tell quite as tall stories (or, in plain English, as many lies) as the Americans. It was in this country that the story of these bees was first commenced by a person who had possessed (?) bees for about six months. There is not, and we venture to prophesy there never will be, a stingless hive bee, for the sting is given to the bee by an all-wise Creator as a weapon of defence.

J. K. GREIG.—*Names of Plants.*—The specimens you send are all of one plant, Ragwort, in the various stages, full flower, fertilised, and seed-pods.

G. WILSON (Bristol).—*Transferring to New Frame Hive.*—You had better let the stock stay as it is until the spring, and then work the bees down on to the standard frames by putting the brood chamber on the top.

Honey Samples.

RADNORIAN.—The honey is good in every respect, light in colour, and from white clover. Worth retail 10d. to 1s. per lb.

H. KAY.—No. 1, rather dull, worth about 45s. per cwt.; No. 2, a fairly good, medium honey, worth 50s. per cwt.; No. 3, a very good light honey, worth 60s. per cwt.

G. W. (Mansfield).—The sample has no aroma, and absolutely no flavour, therefore, without analysing for pollen grains we are unable to tell its source.

Suspected Diseases.

MARK CARTER.—The comb contains healthy brood and pollen. We find no trace of disease. If at any time you suspect foul brood use Apicure. You can use the honey from diseased stocks either for household purposes or for making mead or vinegar.

W. B. JEPSON.—Both lots of bees were too wet for us to examine.

AYRSHIRE.—The bees have "Isle of Wight" disease. You can find out which hive they are from by watching at the entrance for bees falling from the alighting board through being unable to fly.

F. H. BURN.—The bees show slight signs of "Isle of Wight" disease. Watch them for a little while, and if the symptoms you describe get worse then destroy.

R. B. DOBSON.—The comb contains black brood; requeen, and use Apicure. Note our address is not now Henrietta Street, we left there three years ago.

J. SKINNER.—The bees are not starved, they are badly constipated, and show signs of "Isle of Wight" disease. They have Ligurian blood in them.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.
Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

STRONG STOCK, healthy, on 10 frames, W.B.C. pattern hive, 1913 laying queen, rack partly drawn sections, 30s.—ANDERSON, Church-place, Annan.

1913 QUEENS, from Simmin's White Star variety, very prolific, 3s. 6d. each.—FREDK. BULL, Briar Lea, Gellifor, near Ruthin. v 16

PROLIFIC Carniolans, 10 frame stock, pure, 30s.; strong 4 frame nucleus, 12s. 6d.; young queens.—J. FROST, Hartshill, Stoke-on-Trent. v 32

FINEST LIGHT HONEY, in 28lb. tins, 7d. lb. —WAIN, Thorpe Bank, Wainfleet. v 33

LIGHT LINCOLNSHIRE HONEY, 28lb. tins, 50s. cwt.; sample 2d.—ABBOTT, Thorpe Bank, Wainfleet. v 36

3 HIVES BEES, healthy young queens, 25s.; good sections or light extracted wanted, cash or exchange.—GARDINER, Standell Field, Hitchin. v 37

SIX STRONG STOCKS, guaranteed healthy, combs new this year, in strong home-made W.B.C. hives, 25s. each.—DARLINGTON, Schoolmaster, Charing, Kent. v 42

1½CWT. GOOD CLOVER HONEY, in 28lb. tins, 7s. 5d. per stone.—R. METCALFE, Ebberston, Snainton, S.O., Yorks. v 41

SECTIONS WANTED, full, white capped, clover honey, immediately; lowest price carriage paid to HITCHMAN, 15 Prospect Hill, Walthamstow, Essex. v 40

REMOVAL; 6 hives bees, clean, 1913 queens, 25s. each.—HULBERT, Hermitage, Worcester. v39

6 STRONG HEALTHY STOCKS, hybrids, June 1913 queens, on 8 frames, wired, 25s. each, boxes returnable.—F. BROWN, Sproughton Manor Gardens, near Ipswich. v 43

OBSERVATORY HIVE, in mahogany framework, takes 2 Standard frames; also exhibition cases for 6 and 9 sections; would exchange for healthy bees on frames.—V. PICKERING, Blythe Bridge, Staffs. v 30

4 STOCKS OF BEES, 10 frames, young queens, of good quality, guaranteed free from disease, 21s.; send boxes.—H. OBORNE, Glenmore, Guestrd, Bishopstoke, Hants. v 29

SEND for trial bottle my I.W. cure, enough for one hive 1s. 3d., and cure your bees; it will repay you hundredfold.—RANDELL, Ixworth. v 28

SECTIONS and extracted honey for sale, sample 3d.—DAVID HANCOX, Deddington, Oxon.

FINEST light extracted honey, at 58s. per cwt., f.o.r.; sample, 2d.—SIMCOX, 17, Victoria-road, Fallings Park Wolverhampton. v 2

WANTED, first grade sections; also extracted. —Price and particulars to Box XX., "Bee Journal" Office, Bedford-street, W.C.

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

HEALTHY DRIVEN BEES, August delivery, 6s. per lot, safe delivery; fertile queens, 2s. 9d. each.—BRADFORD, Tibberton, Droitwich. v 90

YOUNG FERTILE QUEENS, 2s. 6d.; selected, 3s. each; strong nuclei, 4 frames, 10s. 6d.; 5 frames, 12s. 6d.—KITSON, Stansted, Essex. v 35

DIRT CHEAP; 76 unique cases, 3s. 4d., delivered.—BOWEN, Coronation, Cheltenham.

AUTUMN FEEDING; Bowen's Isle of Wight remedy cures 6 stocks, 1s. 6d.—CORONATION, Cheltenham.

FERTILE, selected, Italian Queens, 3s. 6d. each.—AVERY, Deverill, Warminster. v 34

SECTIONS WANTED, glassed or unglassed, by HONIELADE CO., 23-25, Moorfields, London, E.C.

1913.—PURE imported Golden Italian fertile queens, guaranteed healthy, vigorous, prolific, 4s.; specially selected, 7s. 6d. each, prompt despatch.—J. B. GOODARE, Woden Apiary, Wednesfield, Wolverhampton. v 93

SECTIONS WANTED, any quantity, cash; also extracted.—F. W. WEITZEL, 21, Lonsdale-road, Kilburn, N.W.

NOW is the time to re-queen in order to produce young bees to strengthen stocks for winter.—Choice fertile tested English queens, 5s. each; excellent strain safe arrival guaranteed; send for catalogue of up-to-date bee appliances. Winner of the first prize at Royal Shows, 1910, 1911, and 1912. —WILKES, Lichfield-road, Four Oaks, Birmingham.

1913 PURE FERTILISED CARNIOLAN QUEENS, 4s.; virgins, 2s.; safe delivery guaranteed, but not safe introduction. Orders executed in rotation.—FREDERICK VOGT, 53, Beresford-road, Canonbury, London.

BEAUTIFUL QUEENS, Sladen's, 5s. each.—OLIVER KNIGHT, Epney, Stonehouse, Glos. v 36

SECTIONS WANTED, best quality, for cash.—SMITH and CO., 17, Cambridge-street, Hyde Park.

Editorial, Notices, &c.

STAFFS. B.K.A.

HONEY SHOW AT WOLVERHAMPTON.

On Wednesday and Thursday, July 23rd and 24th, a very successful honey show was held at Wolverhampton, under the auspices of the Staffordshire B.K.A., and in connection with the Staffordshire Agricultural Show. The entries numbered 110, and the quality of the exhibits was, in most classes, exceedingly good. The gold medal of the S.B.K.A. for the best trophy of honey in any form not less than 60lb. nor more than 100lb. in weight went, in a class of six entrants, to Mr. J. Hickman, of Penn, Wolverhampton, the great feature of whose exhibit was a wonderfully accurately drawn out bell-jar of honey. The silver medal of the B.B.K.A. for the best twelve jars of medium-coloured honey was won by Mr. A. Rollins.

The full list of awards was as follows:—

Honey Display.—1st, J. Hickman; 2nd, J. Lucas; 3rd, W. Collis; 4th, W. Marchant; 5th, B. S. Cope.

Twelve 1-lb. Sections of Comb Honey.—1st, J. Kendrick; 2nd, E. Goodall.

Twelve 1-lb. Jars of Extracted Light Honey.—1st, W. Collis; 2nd, J. Kendrick; 3rd, W. Marchant; c., B. S. Cope.

Twelve 1-lb. Jars of Extracted (medium) Honey.—1st, A. Rollins; 2nd, J. Lucas; 3rd, J. Kendrick.

Six 1-lb. Jars of Granulated Honey.—1st, J. Kendrick; 2nd, W. Collis; 3rd, J. Lucas.

Twelve 1-lb. Jars of Dark Extracted Honey.—2nd, J. Lucas.

Frame of Comb Honey for Extracting.—1st, B. Rowley; 2nd, J. Apse; r., W. Marchant.

Beeswax.—1st, E. Goodall; 2nd, W. Marchant; 3rd, J. Lucas.

Six 1-lb. Sections of Comb Honey.—1st, B. Hill; 2nd, E. Kendrick; 3rd, J. Hickman.

Six 1-lb. Jars Extracted Honey.—1st, W. Friend; 2nd, J. Apse; 3rd, B. Rowley; h.c., B. S. Cope; c., B. T. Abell and E. Kendrick.

Six 1-lb. Sections (cottagers).—1st, B. Hill; 2nd, W. Friend.

Six 1-lb. Jars Extracted Honey (cottagers).—1st, W. Friend; 2nd, J. Lucas; 3rd, B. Hill.

OPEN CLASSES.

Observatory Hive, with bees and queen.—1st, T. A. Dennison, Stockton, near Rugby; 2nd, E. Goodall, Stoke-on-Trent.

Twelve 1-lb. Sections of Comb Honey.—1st, C. W. Dyer, Compton, near Newbury, Berks; 2nd, J. Carver, Wellington, Salop; 3rd, J. Clay, Wellington, Salop; c., W. H. Allard, Stockton, near Rugby.

Twelve 1-lb. Jars Extracted Honey.—1st, T. Cooper, Leigh, Stoke-on-Trent; 2nd, T. A. Dennison, Stockton, near Rugby; 3rd, A. H. Bowen, Cheltenham; v.h.c., S. Cartwright, Shawbury, Shrewsbury, and D. H. Burgess, Sandbach, Cheshire; r., A. C. Jackson, Elveden, Norfolk.

Single 1-lb. Jar of Extracted Honey.—1st, W. Patchett, Cabourne, Lincs.; 2nd, R. W. Lloyd, Thetford, Norfolk; r., T. A. Dennison; v.h.c., S. Sanderson, West Wratting, Cambs.

Single 1-lb. Section.—1st, T. A. Dennison; 2nd, A. H. Bowen; 3rd, J. Carver; r., J. Clay.

Hives and Appliances.—1st, E. H. Taylor, Welwyn, Herts; 2nd, J. Knight, Wolverhampton.—C. R. FORSE, Hon. Sec.

LEICESTER B.K.A.

The annual show of the Leicester B.K.A. was held in connection with the Abbey Park Show at Leicester, on August 5th and 6th, the honey department being under the management of the Hon. Secretary, Mr. J. Waterfield.

The number of exhibits was a little below the average, but taken as a whole a fine collection of honey was staged, and showed an advancement in bee-keeping that was distinctly encouraging.

The bees in observatory hives, for which prizes were kindly given by the Mayor of Leicester, were a continuous source of interest. Inquiries as to the why and the wherefore of all that concerns the craft, and as to how to commence bee-keeping, were numerous.

During the day lectures and demonstrations in practical bee-keeping were given in the bee tent, to large and appreciative audiences.

Mr. R. Brown, of Somersham, Hants, and Mr. H. M. Riley officiated as judges, and made their awards as follows:—

Observatory Hive of Bees.—1st, W. H Fountain, Leicester; 2nd, S. Clark, Humberstone.

Twelve 1-lb. Sections.—1st (B.B.K.A. Silver Medal), J. Hunt, Botcheston; 2nd, J. V. Veazey, Wilbaston; 3rd, B. Walker, Seagrave.

Twelve 1-lb. Jars Light Extracted Honey (open to North Leicestershire).—1st, Mrs. E. Varty, Diseworth; 2nd, E. Varty, Diseworth; 3rd, B. Walker; 4th, J. H. Baum, Stoney Stanton.

Twelve 1-lb. Jars Light Extracted Honey (open to South Leicestershire).—1st, J. Waterfield, Kibworth; 2nd, G. Haines, Huncote; 3rd, Mrs. J. Hunt, Botcheston; 4th, J. Bailiss, Nailstone.

Twelve 1-lb. Jars Dark Honey.—1st, M. E. Varty, Castle Donington; 2nd, A. J. Marriott, Market Harborough; 3rd, E. A. Jesson, North Kilworth.

Three Shallow Frames Comb Honey.—1st (B.B.K.A. Bronze Medal), W. H. Fountain, Leicester; 2nd, M. S. Jesson, Hose; 3rd, E. A. Jesson.

Twelve 1-lb. Jars Granulated Honey.—1st, W. Ruddick, Desborough; 2nd, B. Walker; 3rd, S. Clark.

Display of Honey.—J. Waterfield.

Six 1-lb. Jars Dark Honey (Novices).—1st, H. Barditt, Desborough; 2nd, G. Williamson, Castle Donington.

Six Sections Comb Honey.—1st, A. Pickard, Botcheston; 2nd, J. H. Baum.

Six Jars Light Honey (Novices).—1st, W. W. Baum; 2nd, G. Williamson; 3rd, A. Weston, Barlestone.

Honey Beverage.—1st, Mrs. Parkinson, Groby; 2nd, W. Parkinson, Groby.

Beeswax.—1st, Mrs. E. Varty; 2nd, E. Varty; 3rd, J. Bailiss.—*Communicated.*

HITCHIN AND DISTRICT B.K.A.

The third annual show of the above Association was held at Letchworth on August 4th (Bank Holiday). The entries were below those of the previous year owing to the ravages of disease in some parts of the district, but the honey shown was of excellent quality. The judges were Mr. G. J. Buller and Mr. P. G. Russell, their awards giving every satisfaction. The Hon. Secretary showed an observatory hive of bees, which attracted very keen interest. A great attraction to this show was the lecture and demonstration in the bee tent by Mr. W. Herrod, which was very instructive, and drew a large crowd of people, and it is hoped it will not be long before the public in other parts of the district will have an opportunity of seeing a further demonstration of Mr. Herrod's skill.

The following awards were made:—

Six 1-lb. Sections of Honey.—1st, A. Prince, Letchworth; 2nd, L. Chapman, Walkern; 3rd, J. Day, King's Walden.

Six 1-lb. Jars Extracted Honey.—1st, Mrs. Selby, Hitchin; 2nd, A. S. Fellingham; 3rd, A. Prince.

Beeswax was exhibited by Mr. P. Peters, of Hitchin, and Mr. A. Prince, Letchworth, and shallow frames by Mr. Prince and Mr. Docker, Letchworth, not for competition.—J. Cooper, Hon. Sec.

BRIDGNORTH AND DISTRICT B.K.A.

The first exhibition of honey of the above Association was held in connection with the Hampton, Chelmarsh, and District Horticultural Society on Tuesday, August 5th. The Rev. G. E. H. Pratt acted as judge, and stated that the exhibits were of excellent quality and reflected great credit on the bee-keepers in the district; in some cases it was difficult to make an award at all, the exhibits being so nearly of equal merit.

The following were the awards:—

Three Sections of Comb Honey.—1st, E. Banks; 2nd, J. S. Lawton; 3rd, H. Hulme.

Three 1-lb. Jars Light Honey.—1st, W. Shuker; 2nd, R. Turner; 3rd, H. Hulme.

Three 1-lb. Jars Medium-colour Honey.—1st, H. Hulme; 2nd, J. Hawkins; 3rd, W. Shuker.

Single 1-lb. Jar of Honey (gift class).—1st (bronze medal of the Shropshire B.K.A.), J. Hawkins; 2nd, W. Shuker; 3rd, H. Hulme.

Honey Trophy.—1st (special prize given by Messrs. Little and Cooper, Shrewsbury), H. Hulme; 2nd, J. S. Lawton.

During the afternoon a lecture was given by Mr. J. S. Lawton, secretary, on "Bee-keeping under various Conditions," which was much appreciated.—*Communicated.*

RICHMOND AND DISTRICT B.K.A.

A social gathering of the members of the above Association took place on Saturday, the 9th inst., at Oaklands, Kew Road, the residence of Mr. and Mrs. G. Romer. The guests were received in the garden, which was tastefully illuminated for the occasion. The proceedings were opened by Mr. J. G. Romer, the secretary, who briefly sketched the progress of the Association since its inception in June last, which was so satisfactory that the committee have every hope that by next spring they would have their own club house and apiary. To assist in this very desirable end a concert would be held in November, and they hoped to have a honey show early next year, when this year's honey would be exhibited; another lecture would be given in October.

Mr. A. W. Salmon was introduced by the Chairman, and gave a most interesting and instructive lecture on bee-keeping. At the conclusion of his remarks a hearty vote of thanks, proposed by Mr. J. G. Romer and supported by Mr. W. Hampton, the Association's honorary expert, was accorded to the lecturer.

Mr. A. W. Gambrill afterwards gave an exhibition of conjuring, and several very clever tricks were neatly performed without the aid of mechanical appliances of any kind. Refreshments, provided by Mr. and Mrs. Romer, were partaken of, and a conversazione wound up a very successful evening.—J. G. Romer, Hon. Secretary.

AMONG THE BEES.

By D. M. Macdonald, Banff.

THE SEASON UP TO DATE.

The universal complaint in spring was that except in a few cases bees came out of winter quarters below the average in most respects. Quite a number of stocks turned up queenless, owing to the cold and wet season last year, while a very considerable percentage were weaklings in regard to the population, and too many were scant of stores. Then the early season was cold and sunless, allowing of little nectar being gathered from such sources as willows, plane, and fruit bloom. Consequently the amount of brood was restricted, leaving many hives short of bees when the June clover flow came on. The latter was abundant, and appeared rather earlier than it often does. Bees revelled in this liberal yield, and worked up into strong forces. July was throughout warm and dry, with a long spell of very bright sunshine, but at times the effect of a rather persistent north wind prevented as heavy a surplus being gathered as one might expect. By the last week of the month clover was pretty well deserted for the heather, which was then blooming richly—the date at which it was available being considerably ahead of the average season.

Hints on Smokers.—A hand-guard is an absolute necessity in a good smoker nowadays. If much work is being done the fingers are certain to be injured where it is lacking. I prefer a grating of medium fineness to hinder sparks coming out with the smoke. In some smokers the meshes are so small that the smoker clogs and ceases to act, in others they are so large that there might as well be an open space. A hinge on the fore part of the nozzle is an improvement on the slip-on method of closing up, as it is easier closed, takes less room, and keeps the fingers cleaner. A clip attached is a convenience, as by its means the smoker can be hung on the side of the hive while other operations are being carried out, and it is thus ever at hand when wanted, instead of being amissing at the critical moment, or lying under foot to be crushed.

While at times a strong blast is desirable, in nine cases out of ten the cloud of smoke is overdone. When finding a queen the less smoke used the better, as much of it defeats its own ends by setting the bees and queen on the run. At robbing time it is most injudicious to use much smoke, as the bees of the hive are confused and discouraged, while the robbers are aided in getting the upper hand. At honey-taking times, too strong a blast may taint the surplus being taken off the hive. The flavouring of honey is often so delicate that a strong-smelling substance like smoke may taint it and spoil it as a table luxury.

Practical Illustrations.—Undoubtedly, demonstration is the best medium by which to teach the uninitiated how a thing should be done. *Seeing* the thing actually carried out abides with one, whereas *hearing* how it should be done leaves something short of the whole. Midway between the two comes *illustrating* the performance of the act. The camera is a very faithful teacher. Therefore, in common with very many other readers, I welcome the lavish use of the picture aids in the "Helpful Hints," contributed by Mr. Herrod during recent issues. Amateur photography is one of his hobbies, and I am certain he will now rejoice that he devoted so much time to it in his earlier years, as it tells so very effectively in every department of modern bee culture. Of late, too, several other contributors have helped to make our JOURNAL more interesting pictorially to readers. The illustration of the compound eye of the bee is a marvel. The beautiful and instructive pictures of Mr. Harper are such a treat that they will but whet our appetites for "some more," which I understand he is able and willing to supply at some future date. Others, too, are ready to be reproduced in time. Children always look first at the illustrations when opening a new book, and children of a maturer growth are not behind in appreciating an apt and faithful picture of what specially interests them in apiculture.

Section Exhibits.—A prize section of comb honey capable of taking a first place at a leading show is the finest form in which honey can be staged. If honey can be made to appeal to the uninitiated as an appetiser I know of no better way in which to submit it to the average man or woman. The very sight of it calls up thoughts of perfect sweetness and delicious titivation of the most delicate palate. It is, too, a triumph of art on the part both of the bee and its owner. What thousands of visits have been paid to thousands of blossoms before all those cells were filled with honey: what care and art preceded this filling up while the exquisitely constructed cells were being built, and what neatness and delicate handling were required later to seal up all so perfectly. Nor should the skill and art of the bee-keeper be forgotten, for truly he deserves his meed of praise. Remember his care in the neat folding of the wood, his precision in securing a perfect square, his exact fitting of the foundation guide, his careful choice of the hive capable of making the cleanest, truest, and best finished completion. The

man who can turn out, or make his bees turn out, the first class prize section must be a past master in the whole business. I think I hear someone whisper—man? Well, I for one, feel that no one is better fitted to produce the real best than the "better half." The deft and gentle hand of woman excels in such neat and delicate deftness as is required for the best work. I must leave for a future contribution *how* to turn out superior sections.

ERRATUM.

An error appears in Editorial footnote on page 326 of last week's BEE JOURNAL, second column, line four, which should read "that it is Vol. XIII."

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

LEGISLATION AND BEE-KEEPERS IN AUSTRALIA.

[8785] As the British Bee-keepers' Association is endeavouring to get a Bee Diseases Act through Parliament it may interest your readers to know that under the Victorian Bees Act, 1910, the Governor in Council may proclaim certain districts in which bees may only be kept in "prescribed hives." The object is the gradual abolition of box-hives, and the districts first proclaimed are those in which box-hives are a source of danger to commercial bee-keeping. I enclose a Memorandum which has been sent to the local newspapers in the districts proclaimed.

Further proclamations will be made if necessary.—F. R. BEUHNE, Inspector of Apiaries, Victoria.

BEE-KEEPING.

NOTICE TO OWNERS OF BEES.

The attention of owners of bees is invited to a Regulation under the Bees Act, 1910, as follows:

"Prescribed Hive" shall mean any hive, the combs of which are in frames and capable of easy removal for the purposes of inspection.

This Regulation was approved by the Governor in Council on the 29th April, 1913 (*vide* the *Victorian Government Gazette*, of 7th May), and is now operative in the districts defined in a Proclamation under the Act on the same date. The districts mentioned in the Proclamation are the Boroughs of Ararat, Clunes, Hamilton, Horsham, Port Fairy, Portland, Sale, Maryborough, Stawell, Talbot, and the Shires of Arapiles, Ararat, Avoca, Avon, Bairnsdale, Belfast, Dundas, Melvor, Maffra, Minhamite, Mount Rouse, Portland, Stawell, Strathfieldsaye, Talbot, Wannon, and Wimmera.

The effect of the Proclamation and the Regulation in conjunction is that bee-keepers in those localities may not keep bees in other than "prescribed" hives.

We are, however authorised to notify that whilst the Proclamation has effect from the 1st May, all owners are afforded opportunity to arrange for the transfer during the coming swarming season, and that the section of the Act, which prescribes a penalty not exceeding £20 for failure to comply with the provisions of the Act, will not be enforced until every owner has had time to conform thereto.

In order to effect the change with as little inconvenience as possible, owners are recommended to have frame-hives in readiness to hold all swarms.

A LONG SWARM.

[8786] I send a photograph of a swarm which may be of interest to your readers. It came out on the longest day (June 21st), therefore I suppose it acted accordingly. You will guess it was hived by arranging a tripod over the swarm, and driving up the bees with smoke. Note the rose growing out of the top of swarm; it was an extremely thin standard.—J. S. BALDRY, Lincoln.

BEES IN RHODESIA.

[8787] There are certain benevolent persons who, after gaining a few victories by sheer kindness and without any resort to violence, spend the rest of their lives in preaching the gospel of gentleness and tact. Such persons, apparently, can succeed in making tigers behave like pussy-cats, hawks like sucking-doves, young savages like gentlemen, and bees like domestic flies, without even once in their lives revealing the iron hand under the velvet glove. "Never be rough with your bees" is a rule which will carry an apiarist a long way with Carniolans, Ligurians, or even with the English variety of bee, but when we arrive at latitude 20deg., South, it becomes very hard to square what is with what ought to be. Rhodesian bees have spirit of a very concentrated kind. "So much the better," says the arm-chair philosopher; "it probably means that they do more work, and that they can call out the

latent tactfulness of any bee-keeper who is worth his salt."

Now, it is a hopeful sign when a human animal has a bit of the devil in his composition; but we like the devil, whether in boy or girl, to be kept well whipped and confined within reasonable limits, for we hold that half the battle of life consists in keeping one's own particular devil in a state of chronic whippedness. In the case of bees we expect the fighting tendency to be kept so well in check that the owners of it will submit to interference and robbery with a good grace and, if possible, with a grateful heart. This is precisely what the Rhodesian bee will not do. For hundreds, nay, thousands of generations, her passions have been allowed to rise, and she defends herself savagely against the most tactful and benevolent aggressor. According to the French saying,

"Cet animal est fort méchant;
Quand on l'attaque il se defend."

Before coming to this country I had much contempt for bee gloves, but now I put them on double, and generally do the robbing at night, not so much for my own sake as for that of the neighbours. The most that one can say is that the bees are not always savage. Small colonies are often good tempered and can be united easily, while in the early spring a queen may be searched for and captured without the help of a veil. But during the honey-flow of a good season, when all the stocks are strong and bent on making their pile as soon as they can, a gentle colony is about as rare as is a gentle South African capitalist when anyone tries to diminish *his* pile. The importation of gentler races is very much restricted by law; and the owner of a hundred hives, who objected to such legislation, declared that he would as soon burn his hives as people them with Rhodesian bees.

This last year I had seven stocks of Rhodesians, which yielded over 300lb. of run honey and about 300 sections—and that in a season of drought. Nearly all the rain came in a heap during less than three weeks of February and brought out multitudes of flowers which, when once started, were able to hold out against the subsequent dryness. As only one colony of the seven swarmed, they did better than they sometimes do in a normal year.

A MIDSUMMER'S DAY SWARM.

The bees here are largely independent of the rains, which, in a good year, start early in November and end late in March. There are trees on the veld which blossom regularly in September and October, often after six or seven months of dry weather, and strong colonies will gather heavily from them some time before the rains begin. This early spring honey is thick and clear and of delicious flavour, and the sections filled with it are often the best of the season. But lifting the honey is dirty work, and I should be glad to meet a bee-keeper more tactful than my-

self, who could place the super clearer without irritating the bees and killing dozens of them in the process.

As a rule a hived swarm goes away the same or next day, at least if there is nothing but foundation in the frames. On the other hand it is easy to get new colonies by placing empty hives in the right places. Hence anyone who wishes to start bee-keeping need not buy stocks. If he provides the appliances the bees will come of themselves. Non-bee-keepers are often pestered by this tendency and find swarms in all sorts of awkward places—wardrobes, ottomans, stable floors, and church towers. This season I have removed bees from a water-meter and from the lid of a sewing-machine, and have lately been invited to take a colony out of the darkness of a dynamite magazine. This task will have to be accomplished with the help of an electric lamp, as the township of Bulawayo has already had one magazine blown up and is still in its period of reasonable caution.

As this can hardly yet be called a settled country, bee-keeping is not common here, and no particular kind of hive has been generally adopted. I use the "W. B. C.," but I have seen more American hives than any others in the apiaries I have visited. Once I bought some American foundation, as it was the only sort I could procure in the neighbourhood, and I wanted it for immediate use. It was beautifully arranged in half-pound packages, sandwiched between thin wooden boards. This method of packing prevents the edges from being frayed in transit. The British foundation which I generally use is, of course, the size I want, but the edges of it are often frayed during their passage of some 7,000 miles of land and sea. It seems to be felt all over the Colonies that, though British goods may be, on the whole, better than others, yet American manufacturers are much more regardful of the minor requirements of their oversea customers than are their British competitors. The Britisher seems to say: "If you do not like my goods so much the worse for you," while the Yankee welcomes criticism and says: "If my goods are not absolutely to your liking, say where the defect is and it shall be made right next time." Small superficial differences will often settle the issue in trade competitions, and slight improvements in time-honoured ways will sometimes win a market. Foundation worked into neat one-pound or two-pound regulation packets is easier to handle and to store on arrival, and it comes in as good condition as when it left the producer's yard.—Rev. I. Kendal, S.I., Bulawayo, Rhodesia.

"ISLE OF WIGHT" DISEASE.

TREATING DISEASED STOCK.

[8788] Your kind reply in your Journal, *re* disease, encourages me to ask another question. What is the right quantity of sulphate of quinine to use in syrup? It has been mentioned several times in correspondence in the "B.B.J.," but no quantities are given.

I did not destroy the stock as advised, but have used powdered lime, as recommended in Board of Agriculture leaflet, and the bees seem to have recovered. I also fed with about a pint of syrup medicated with 30 drops of homœopathic sulphate of quinine (China 7), and they are now breeding again and going strong. Also two bee-keepers near here have used lime—one with sulphur mixed with it—both successfully. Whether their stocks are permanently cured remains to be proved. I thought I ought to let you know, possibly for the benefit of others.—P. E., Fareham.

[Mr. Wigley (see "B. B. J.," page 234), who has experimented successfully with sulphate of quinine, uses 60 grains to every gallon of syrup.—Eds.]

You very kindly examined my bees for me in March, and found them suffering from "Isle of Wight" disease. I should like to give "B.B.J." readers the benefit of my experience with the malady.

The bees from the hive in question were dying in large numbers, and became much reduced, so I treated the hive with a painter's lamp and afterwards gave it a good coat of Ayles' Winter Cure for "Isle of Wight" disease. This treatment checked the complaint at once, but I was told by the expert and others that they had had the same result, but the disease broke out again after a little time.

At the beginning of May I gave the stock a good dose of Bowen's Cheltenham Cure, and it recovered so well that it gave 40lbs. of honey and two good swarms, each of which has about 30lbs. in the super. I hope I have seen the last of the "Isle of Wight" disease.—H. Beale.

BOY SCOUTS AND BEE-KEEPING.

At the Imperial Scout Exhibition, held at Birmingham in July, the prizes presented by the B.B.K.A. for bee-keeping were awarded as follows:—

Equal 1st (silver pendant and 10s.), Scout Pickup and — Knight, Buckhurst; 2nd, C. Ransom, Shenley, Herts.

RANDOM JOTTINGS.

By Charles H. Heap, Reading.

A well-known author, who writes charmingly on nature subjects, recently contributed an article to a daily newspaper, entitled "The Bee Mystery." The mystery was nothing but the supposed unknown cause of "Isle of Wight" disease; but the writer thought, apparently, that he had stumbled upon a discovery, and that in consequence attempts by means of legislation to deal with the disease are unnecessary. This gentleman's experience with a diseased stock is by no means singular. Others have made similar experiments, only to find, before the winter had passed, that death had been sitting on their bee-hives all summer waiting to reap his harvest.

Old- or New-Fashioned Winter Feeding.—The article also said that the villagers living near the writer were so old-fashioned in their methods of management that they never fed their bees in winter. To feed bees in winter is not only old-fashioned, but is evidence of bad management. It is impossible to impress too strongly and too often upon bee-keepers the necessity of doing the winter feeding, and much of the spring feeding, too, before the end of September. Candy feeding at best is a makeshift, and is not so satisfactory as winter food in a natural form. We all know how a colony with a good queen and an abundance of sound sealed stores goes ahead in early spring, and is ready to take an advantage of an early honey-flow. A drawback of ordinary candy is its relatively small content of water. With candy as the only food, brood-rearing must be checked or the bees must undergo an undue amount of labour in carrying water into the hives. As last winter and spring the loss of bees owing to starvation was very considerable, and bees are therefore comparatively scarce, it behoves bee-keepers to see that their bees are now well supplied with stores. In this connection I wish to give a special warning. No one should assume that because he has taken a large quantity of honey from a hive that the colony is sure to have plenty of stores. The contrary is likely to be the case. The reason is simple. It requires a very large force of bees to gather an exceptionally large quantity of honey, and a first rate queen to produce a huge population. The production of a huge population means that breeding combs are filled to the top bar with brood during the earlier part of the gathering season, when colonies with only moderate queens are packing the brood-chamber with honey. The habit, early acquired, of taking honey into the supers is continued during the flow, and, of course, when the supers are removed, the bees have in some instances nothing but a bare cupboard. If this is not filled promptly and well, the colony dies. The mere death of the bees is, however, not the only disaster, for a good gathering strain has been lost. Do not be old-fashioned, but get out the feeders, and, where necessary, feed with a lavish hand. Feed slowly at first in order to get a nice lot of brood started, but finish up with plenty of good thick syrup.

The Advocacy of Large Skeps.—For some inscrutable reason there are bee-keepers, who, calling themselves "modern," advocate the use of skeps. I fail to see how the use of skeps can promote good bee-keeping. I know it is said that a poor man cannot afford to buy frame-hives; but I am sure, considering the extra profit to be derived from frame-hives, that no labouring man with an aptitude for bee-keeping and his head screwed on the right way would long remain a skeppist. I am not unacquainted with bee-keeping on the skep system. As a rule, it is a source of little profit, and it always appears to me that the skep is the refuge of the man who has not the ability to manage a frame-hive. I was amused some time ago by a gentleman coming up to me in the bee tent at an agricultural show and saying in a voice loud enough for everybody to hear: "The latest thing in bee-keeping is large skeps, isn't it?" "No," I replied, "Pettigrew was advocating the use of large skeps over thirty years ago." That was enough; the loud assertive voice was heard no more. Since then I have looked up the subject, and find that large skeps were being used and advocated at Karluke, in pre-Victorian days, by Pettigrew's father. From the skeppist point of view the Pettigrews were right. But what can be done with large skeps can be infinitely better done with properly constructed frame hives. Why then advocate the use of a hive which has so many drawbacks and no good points which cannot be secured with a frame-hive?

Bees and Snakes.—In this country, at least, bees and snakes are not a common combination. Recently I noticed something wrong with a skep in an apiary containing a mixture of skeps and frame-hives. Determining to ascertain the cause, I lifted off the cover, which was the top of a frame-hive. Below it I found some quilts, and, as I dragged them off, I saw what appeared to be a piece of silk cord. Before I could get a clear view of it, the "cord" moved, and a fine snake, over two feet long, glided quickly and gracefully into the grass, finally passing under the box upon which the hive stood. I lifted the skep and found that the combs had fallen, and were being cleared out by

robber bees, which had apparently only just made the discovery. On relating my experience to the owner, he told me that two snakes, which had taken a fancy to his hive, had been killed. Here is a chance for those who are fond of conundrums. "Had the snakes anything to do with the destruction of his stock?"

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Washing the Extractor (p. 288).—"H. C." has had an object lesson which will probably ensure scrupulous care in future. Most of us find out by unfortunate experience the need of this. Neither extractor nor strainer should be allowed to remain honeyed for a moment longer than is necessary. There often exist small scratches where the tinning has been damaged, or where it has become thin, and rust often lurks in difficult corners owing to the extractor having been stored away while still damp from washing. The most effective method of removing every vestige of honey is to give the vessels to the bees to be cleared up. Allow them to remain, protected from weather, until the bees no longer take any interest in them. Robbing will thus not be started, although it is well to suitably close down the entrances as a precaution while the excitement is on. It is well to prevent the honey coming in contact at all with the metal. This can be ensured by waxing the surfaces. Heat before a strong fire, and lightly rub a white wax candle over the heated metal until there is a thin film of wax over all. The honey gates and wire baskets should also be coated in the same way.

Definition of Colony (p. 294).—I think Mr. Hamshar has misunderstood my attempt at definition. I should certainly admit "colony" in his case. I tried to express this general term as including the more particular. If a handful of worker bees went on strike, and decided to go and live a virtuous life by themselves, I should still admit their claim to be a colony. A rather extreme, and, no doubt, not very hopeful case from a bee-keeping point of view, but it will serve to show what I mean.

Skeps and Scepticism (p. 294).—Replying to Mr. Hamshar, whose greeting I return, I am not an advocate of the skep for the modern bee-keeper, although it may serve some of his purposes, but a defender of it for the cottage bee-keeper, who is not modern enough to use a frame-hive. I have never contended that it was the peer of the modern hive, or adapted to modern requirements. It is perhaps unfair to point out that my critic's skep was healthy the while the frame hive became affected, or to suggest that it might have remained so, but for his manipulation. That, of course, one cannot know, but it is still a mystery why swarms should succumb, if one may take for granted that the hives and foundation are sterile. The disturbance of the ratio of brood to bees seems to be a common factor in the case given.

Transferring Bees (p. 298).—A method of removing bees from a tree without cutting, which I have found effectual, and which was recently used by Mr. Jesse Fry, of Ilkley, in the case of a hollow support of a gasometer, and which may be of service to "A. H. R.," is the following:—Prepare a carbolic cloth of medium strength, that is, not too strong, insert this as far as possible. If the bees are above, it can be wrapped round a stick and pushed up. If below, it can be tied round a stone or similar weight and be lowered on a string. As the bees come out they can be followed up by the cloth. Watch for the queen, and place her in a nucleus hive with a comb containing a little brood and some stores. Confine her to the hive with excluder at entrance. Hang the nucleus with entrance close to the hole. Close the hole all but a bee-escape; allow a portion of the bees to return, when fix the escape. In four or five weeks unstop the hole, when the bees will probably remove the honey to the hive. The hive should be proportioned to the strength of the colony, but a four- or five-frame nucleus may have its combs (when built) exchanged for foundation if the colony is too strong. Finally, the escape should once more be fixed before removal of the hive, which can be lowered by stages. If driving the bees out is impossible (it should not be), omit this part of the operation, and proceed otherwise as above, but provide a caged queen for the nucleus, and allow a longer interval before unstopping the hole.

Peroxide of Hydrogen (p. 298).—This remedy for bee-stings, given by "A. H. R.," seems worth a trial. Unfortunately (or not) it is not possible for old bee-keepers to try any remedies, virtue having become its own reward.

Bee Shows to Come.

August 27th, at Chester.—Annual Show of the Cheshire Bee-keepers' Association, held in connection with the Cheshire Agricultural Society's Show. Several open classes, and good money prizes. Schedules from T. A. Beckett, St. Werburgh Chambers, Chester.

August 27th and 28th, at Derby.—Derbyshire Agricultural Society's Show. Bee and honey section under the management of the Derbyshire Bee-keepers' Association. Open classes for bee appliances and honey.

September 2nd, 3rd, and 4th, at Newcastle-on-Tyne.—The Northumberland and Durham Beekeepers' Associations, in conjunction with the Durham, Northumberland, and Newcastle Horticultural Society's Show. Schedule from Hon. Sec., the N.B.K.A. Wooler; the D.B.K.A., Butterknowle; or Sec. of Horticultural Society, 24, Grainger-street West, Newcastle-on-Tyne.

Deddington Horticultural Society 5th Annual Flower Show, Tuesday, September 2nd.—Honey class open to the kingdom. Schedules from Mr. H. J. Harmsworth, hon. sec., Deddington. **Entries close August 23th.**

September 3rd, at Lancaster.—Lancaster Agricultural Society. In conjunction with the Lancashire B.K.A. Classes for honey, bee produce. Specials, including two silver challenge cups, two silver and one bronze medals. Write for honey schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 27th.**

September 4th, at Abington Park, Northampton. Northants B.K.A. Annual Honey Show. Special prizes for open classes, including one for single 1lb. jar. Entry free. Schedules from R. Hefford, Kingsthorpe, Northants. **Entries close August 28th.**

September 12th and 13th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes, with liberal prizes, for appliances, extracted honey, sections, fitting-up frames, fitting-up sections, judging competition, &c., &c. Schedules from G. Hayes, Mona-street, Beeston.

September 13th, at Conway, North Wales.—Annual Honey Show in connection with the Conway Honey Fair. The Conway Honey Fair has been annually held for centuries. Great opportunity for visiting one of the most historical districts of Wales. Open and local classes. Special prizes. Schedules from J. Hughes, Town Hall, Conway. **Entries close September 9th.**

September 20th to 27th, at Royal Agricultural Hall, London.—Twenty-first Annual Exhibition of the Grocery and Allied Trades Honey Section under direction of the British Beekeepers' Association. All open classes. Special prizes (see advertisement). Schedules from H. S. Rogers, Secretary, Palmerston House, Old Broad Street, London, E.C.

September 24th, at Altrincham.—Honey Show, under management of Cheshire Bee-keepers' Association, in connection with Altrincham Agricultural Society's Show. Four open classes. Schedules from J. B. Hall, 1, Market Street, Altrincham, Secretary. **Entries close September 6th.**

Sept. 24th and 25th, at Kendal.—The Annual Show of Honey, Wax, and Appliances of the Cumberland and Westmorland B.K.A., in connection with the Northern Counties Fruit Congress, in the Market Hall, Kendal. Eleven open classes. Liberal prizes. Note.—All prize-money will be paid on second day of show. Schedules from G. W. Avery, Wetheral, Carlisle, or Geo. Chatham, Low Green, Staveley, Kendal.

Notices to Correspondents.

***Will the person who sent R. Dutton an unsigned typewritten letter asking for sample of honey, please send him name and full address.

NOVICIATE (Chadwell Heath).—*Immature Bees Cast out of Hive.*—You need not be alarmed, the bees cast out are drones. At this time of the year when bees have given up all idea of swarming, they often cast out drone brood to save consumption of food.

K. P. (Marlborough).—*Preserving Fruit in Honey.*—Proceed exactly as if making ordinary jam or fruit preserves, substituting honey for the sugar.

A. B. (Forfarshire).—*Position of Larvæ.*—There is nothing wrong with the larvæ, it lies in quite the normal position in cells.

STINGBUG.—*Bees for the Moors.*—The Naphthal Beta appears to be all right. We do not think it will pay you to move your bees to the moors this year; keep them at home and get them strong by feeding. Next year you could take them, as they should then be strong.

FIFE BEE-KEEPER. *Uniting Swarm to Queenless Stock.*—You united them a little too early; evening is the best time for this purpose. It would also have been advisable to cage the queen for twenty-four hours.

J. S. (Bangor). *Constipated Bees.*—We know of no treatment except painting the inside of the hive with Ayles' cure for constipation.

E. S. (Barnet Green).—*Parasites on Queen.*—There is nothing wrong with the queen, but she is infested with the parasite, *Braula cæca*.

S. J. F. (Dulwich).—*Selling Honey.*—(1) The payment of carriage on honey is a matter of arrangement between buyer and seller. (2) The bees have "Isle of Wight" disease.

Suspected Disease.

W. M. (Strathpeffer).—The bees have died from starvation.

W. G. D. (Leeds).—(1) There is no disease in bees sent. (2) It will be perfectly safe to use the combs.

A. S. P. (Abbey Wood). The bees have "Isle of Wight" disease.

Honey Samples.

J. D. (Northants).—Sample is a very good light clover honey, the aroma being especially fine. Quite fit for show purposes.

R. D. (Essex).—Very good light-coloured honey. If cleared of air bubbles and slight cloudiness, pointing to early granulation, it would be quite up to first class show standard.

A. B. C. (Lichfield).—Your sample is a good light honey, which should stand a good chance of a prize at a local show, but the flavour and density are not quite good enough for the big London shows, such as the Grocers' or the Dairy Show.

NOVICE (Cheshire).—A thin honey of poor aroma and flavour. It is not good enough for show purposes.

W. S. (Exeter).—A good honey, rather lacking any distinctive flavour, and perhaps a little too sweet. Worth 56s. per cwt. in bulk. Might win prizes at local show, but not quite good enough in flavour and density for a big London exhibition.

H. P. (Kingsbridge).—Your honey is very good in consisteney and colour. The aroma is indefinite, and though the flavour appears good, it is a little tainted with some essence of a slightly oily nature; perhaps the previous contents of bottle would account for this. We should say the honey would stand a very fair chance of success at a big show.

A. B. K. (Watford).—Both samples are very good honey. No. 2 is most suitable for showing, and should be entered in the light honey class.

C. J. M. P. (Leicester).—(1) The honey is mainly from lime. It has also a very small quantity of honey-dew in it, so that you will have to sell it at a lower price than usual. There is not sufficient to quite spoil it, and it should realise 8d. per jar. (2) The book gives a good idea as to judging quality of honey, but to ascertain the composition, chemical knowledge is required.

M. E. (Bucks).—No. 1 sample is good in quality, and quite suitable for showing in light class. No. 2 is a medium honey, and is also worth exhibiting.

G. GRANT.—The samples of honey arrived in a very sticky condition owing to the package leaking. Both are of medium quality, and have been gathered from lime.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

FOR SALE, a "Little Wonder" extractor, will extract brood, shallow, or sections, nearly new, 5s.—W. D. KING, 20, Moy-road, Cardiff. v 51

EIGHT stocks of healthy bees, in 12-frame hives, on ten frames; inspection invited; also 1cwt. of extracted honey.—J. RAMM, Eastington, Cirencester, Gloucestershire. v 48

WHITE CLOVER HONEY, very pale, 65s. cwt., f.o.r.; sample, 3d.; 7lb. tins, 5s. 6d., post free; beeswax, 1s. 6d. lb.—Apiary, Fordham Abbey, Soham, Cambs. v 47

FINEST EXTRACTED HONEY, 1cwt., in 1lb. screw top jars, 9s. 6d. dozen, 84s. lot.—DR. LLOYD, Cradley Heath, Staffs. v 46

TWO 1-frame observatory hives, 5s. each; few virgin queens for disposal, 1s. 6d. each.—TICKELL, Westbourne, St. Marks, Cheltenham. v 45

"ISLE OF WIGHT DISEASE."—To owners of infected stocks, and those wishing to prevent infection, we invite applications for free circular describing an entirely new and extensively tested inexpensive cure and preventive of this scourge.—Write, ALFRED FRENCH, Richmond-road, Cambridge.

EIGHT SUPERS, each containing ten fully drawn out combs, clean, perfect condition, 5s. each; lifts for same (W.B.C.), 1s. 6d.; also three W.B.C. hives, ten frames foundation.—FOSTER, 86, Princess-street, Manchester.

3CWT. GOOD HONEY, 58s. cwt., tins and crates free.—W. WHITE, Gas Works, Wilton, Salisbury. v 56

PURE CAMBRIDGESHIRE HONEY, 28lb. tins, 58s. 6d. per cwt.; sample, 2d.; cash with order.—J. YOUNGER, 51, Maid's Causeway, Cambridge. v 19

FOR SALE, ten strong, healthy stocks of bees, on ten frames, in good hives, two section racks to each, 21s. each; also sections and extracted honey.—W. BARNES, Exning, Newmarket. v 55

TWO STOCKS ITALIAN BEES, healthy, wired frames, 25s. each, or exchange honey.—JULIAN LOCKWOOD, Hunstanton. v 57

EXCHANGE, banjo in case, 30s., for bees, appliances, gentleman's bicycle; two 1913 fertile queens for disposal, beauties, 5s. each.—EDWARDS, 65, Haliburton-road, St. Margaret's, Twickenham. v 59

FEW dozen sections, good, for sale; what offers?—HILLS, Enford, Wilts. v 58

SIX STRONG STOCKS, guaranteed healthy, combs new this year, in strong home-made W.B.C. hives, 25s. each.—DARLINGTON, Schoolmaster, Charing, Kent. v 42

REMOVAL; 6 hives bees, clean, 1913 queens, 25s. each.—HULBERT, Hermitage, Worcester. v39

6 STRONG HEALTHY STOCKS, hybrids, June 1913 queens, on 8 frames, wired, 25s. each, boxes returnable.—F. BROWN, Sproughton Manor Gardens, near Ipswich. v 43

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

THE IMPROVED PRESERVE JAR STAND keeps those tiresome wasps and flies out of the honey. See "B.B.J." April 24th. For honey, price 8s., carriage paid; for jam, with cut glass jar, 10s., carriage paid.—P. N. RUSSELL, 2, The Parade, Minster, Ramsgate.

"I.O.W." cure, 1s. 6d., feed now; many successes.—BOWEN.

"MONEY-SAVING" SECTION CASES, 76 3s. 4d.—BOWEN, Coronation, Cheltenham.

YOUNG FERTILE QUEENS, 2s. 6d.; selected, 3s. each; strong nuclei, 4 frames, 10s. 6d.; 5 frames, 12s. 6d.—KITSON, Stansted, Essex. v 35

FERTILE, selected, Italian Queens, 3s. 6d. each.—AVERY, Deverill, Warminster. v 34

SECTIONS WANTED, glassed or unglassed, by HONIELADE CO., 23-25, Moorfields, London, E.C.

1913.—PURE imported Golden Italian fertile queens, guaranteed healthy, vigorous, prolific, 4s.; specially selected, 7s. 6d. each, prompt despatch.—J. B. GOODARE, Woden Apiary, Wednesfield, Wolverhampton. v 93

SECTIONS WANTED, any quantity, cash; also extracted.—F. W. WEITZEL, 21, Lonsdale-road, Kilburn, N.W.

1913 PURE FERTILISED CARNIOLAN QUEENS, 4s.; virgins, 2s.; safe delivery guaranteed, but not safe introduction. Orders executed in rotation.—FREDERICK VOGT, 63, Beresford-road, Canonbury, London.

Editorial, Notices, &c.

SURREY B.K.A.

The annual exhibition of the Surrey Bee-keepers' Association was held on August 6th, in conjunction with Guildford and West Surrey Agricultural Association Show, under the presidency of Mr. W. Welch, J.P., C.A., of Cranleigh, and proved highly successful. The exhibits were staged in a marquee, and the attractive way in which the show was arranged, under the direction of the hon. sec., Mr. F. B. White, of Redhill, met with the warm approval of the many visitors. The entries numbered over 120, which was very gratifying in view of the prevalence of bee disease, which, however, appears to be decreasing. Mr. White displayed a number of educational exhibits, and Miss Betts, of Camberley, sent an interesting and instructive chart, showing the source from which pollen is extracted by the bees, and the periods of the year when it is gathered. Non-competitive exhibits were also sent by Mr. Seth Smith, Mr. Kachler, and others. Demonstrations with live bees were given in a tent, and many engaged and interested in the industry attended.

Mr. A. J. Carter judged the exhibits, the awards being as follows:—

MEMBERS' CLASSES.

Six 1-lb. Sections.—1st, J. Silver, Addiscombe; 2nd, A. T. Hedger, Caterham; 3rd, W. Welch, Cranleigh; h.c., C. Monk, Kingswood; c., M. J. Lamboll, Chiddingfold, and E. P. Maynard, Guildford.

Six 1-lb. Sections of Heather Honey.—1st, Miss Peel, Chertsey; 2nd, A. Seth Smith, Cobham; 3rd, G. C. Bullen, Cobham.

Two Shallow Frames for Extracting.—1st, M. J. Lamboll; 2nd, A. Watkin, New Malden; 3rd and c., W. E. Hamlin, Claygate.

One Shallow Frame for Extracting.—1st, M. J. Lamboll; 2nd and h.c., W. E. Hamlin; 3rd, E. Trewby, Streatham Hill; h.c., A. Watkin.

Six 1-lb. Jars Medium-coloured Honey.—1st, J. C. Fell, Longwall, Walton-on-Thames; 2nd, C. Monk; 3rd, J. Bowden, Witley.

Six 1-lb. Jars Light-coloured Honey.—1st, H. J. Snell, Worplesdon; 2nd, W. Bourne, Esher; 3rd, M. J. Lamboll; h.c., J. Silver and J. Kachler, Woldingham; c., Miss Unwin, Churt, Farnham, and A. T. Hedger.

Six 1-lb. Jars Heather Honey.—1st, M. J. Lamboll; 2nd, G. C. Bullen; 3rd, A. Seth Smith.

Six 1-lb. Jars Heather Blend.—1st, M. J. Lamboll; 2nd, G. C. Bullen; 3rd, A. Seth Smith.

Six 1-lb. Jars Dark-coloured Honey.—1st, J. Bowden.

Six 1-lb. Jars Granulated Honey.—1st, J. Kachler; 2nd, M. J. Lamboll; 3rd, A. Watkin.

Six 1-lb. Jars Heather or Heather Blend.—1st, G. C. Bullen; 2nd, H. J. Snell; 3rd, A. Seth Smith.

Beeswax.—1st, A. T. Hedger; 2nd, H. J. Snell; 3rd, Miss Unwin.

Three 1-lb. Sections.—2nd, E. Trewby; no first awarded.

OPEN CLASSES.

Six 1-lb. Sections.—1st, W. Patchett, Caistor; 2nd, C. Royds Jones, Fleet, Hants; 3rd, Wm. Welch.

Six 1-lb. Jars of Light-coloured Honey.—1st, George Butler, Crawley; 2nd, W. Patchett; 3rd, E. P. Maynard.

Two Shallow Frames for Extracting.—1st, A. Watkins; 2nd, E. P. Maynard.

Beeswax.—1st, F. B. White, Redhill; 2nd, George Butler.

Collection of Hives and Appliances.—1st, C. T. Overton and Son, Crawley.—F. H. WHITE, Hon. Sec.

MR. MASON'S BEE PICTURES.

Mr. J. C. Bee Mason will be at the Empire Theatre, Middlesbrough, for one week, commencing September 1st, when his wonderful bee pictures will be shown every evening. Many of our readers have had the pleasure of seeing the pictures and hearing Mr. Bee Mason's interesting "bee talk," with which he introduces each of the films, and those bee-keepers within reach of Middlesbrough should not fail to take advantage of the opportunity afforded of enjoying this most unique entertainment.

HELPFUL HINTS FOR NOVICES.

By W. Herrod.

UNITING BEES.

As a rule, bee-keepers, and especially novices, do not take sufficient advantage of the opportunity for making strong stocks, either for securing surplus or for wintering, provided by the movable comb-hive. The object of bee-keeping is to secure honey, and not to have stocks of bees in the garden to look at, or to boast to others of the number possessed, and honey can only be secured by having the hives packed with bees so that at the right time they will overflow into the supers.

Novices are very loath to reduce the number of their stocks and often have an idea that they can build them up strong enough for the honey harvest, or that with care they will pass through the winter; it is a rare occurrence for either of these expectations to be realised. At times it may be an advantage to nurse a stock

which is weak in the spring, so that it will build up strong enough for the winter, or even be numerous enough in bees to divide into two at the end of June, but for honey production and successful wintering, uniting must be done.

As soon as the weather will allow, an examination should be made in the spring and all weak stocks noted. If there comes a week or ten days of bad weather, which keeps the bees confined to their hives, those containing the weak lots can be placed close together in pairs, or,

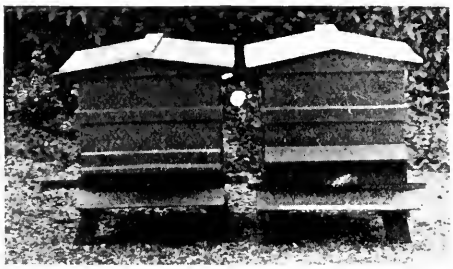


FIG. 1.

if very weak, in threes. If the weather keeps fine, and they are flying most days, then it will be necessary to move them not more than one yard per day on those days only when they are flying. The pairs should be arranged so that a minimum of movement is necessary, that is pairs or

FIG. 3.

threes should be made up of those stocks in close proximity to each other. So that the operation may be understood clearly, I will give four simple illustrations. Fig. 1 shows the hives standing side by side after moving. Now remove all combs not covered by bees from each, close up with the division board, and allow them to stand for a few days so that the bees get thoroughly used to their new location. In Fig. 2 it will be seen that each lot has been reduced to five combs. In the evening remove the worst queen or queens and cage the best one, remove the division board and dust the bees on the combs with ordinary flour; this can be done with a flour dredger or with the hands. I prefer the latter, having a basin with the flour in it by my side. Do not be afraid to use the flour. The frames are put back well separated, so that after lifting the combs from the other hive and dusting the bees, they can be interspaced (see Fig. 3); the empty hive is now taken right away, and the one which stood on the left (Fig. 4) and which can be recognised by having a cone escape in the roof, is left for all the bees to enter. At the end of twenty-four hours the queen is released. The object of bringing the hives together gradually is that bees

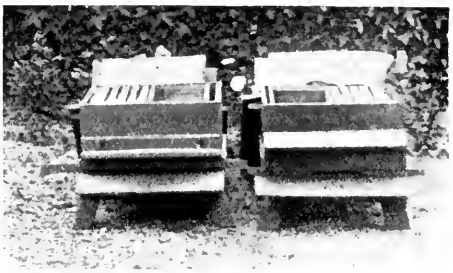


FIG. 2.

locate position and not the hive, so that if moved the whole distance when busy working, a good many would be lost. Flour is used to cause the bees to all have the same odour, as it is by scent that they recognise each other, therefore they amalgamate peaceably. Some bee-keepers

FIG. 4.

use syrup, in which is mixed peppermint or other scents, to spray the bees with. This makes a sticky mess and is very likely to induce robbing. The flour is collected and used as pollen. Although not always done, it is safest to cage the queen in case of an accident at a time when it is difficult to replace her. The work of uniting should be carried out in the evening, as then all the bees will be at home, and none will escape being floured. It will also give them twelve hours to settle down in. In the autumn this is essential, or robbing may take place.

When driven lots of bees are to be united to established stocks, it is best to take out four or five combs from the stock,

place them in an empty hive which is standing close beside the occupied one, hive the driven bees into this, and after about four days unite as described.

If it is desired to unite the bees from two or more skeps, then, after getting the skeps side by side, drive them one after the other into one skep, catching and killing the worst queen or queens. In doing this, remember the youngest, and therefore probably the best, queen will be in the skep that has swarmed. The excitement of driving will cause the bees to amalgamate peaceably without the use of flour. They are then hived in the ordinary way into the skep that is to remain.

When uniting for wintering is done, it should be carried out as early as possible in August, so that the augmented stock may go on breeding, and also collect a little food which, together with the syrup given, will be sealed over and make sound stores for them to winter on.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

DERBYSHIRE NOTES.

[8789] I would like to endorse what A. MacCullah says on page 326 of BEE JOURNAL with reference to finding a market for honey. About two years ago I had rather more on my hands than I could get rid of around here, so I asked the Editor could he put me in touch with a possible buyer. He there and then gave me an address that has been most useful to me ever since, and only the other day I had a large order from this same customer. While writing, I would like to suggest that D. Wilson (page 323) makes that farmer a present of a jar of honey, then he may leave him a good crop of charlock another time.

Last year, close to my out-apiary was a field of clover, and in the reaping and gathering of the crop two or three of the men were stung by the bees. When I had extracted, I made a special journey of six miles to take the owner of the field, a jar of honey. The result was there were no black looks when I went round there again with my bees this year. I might have put them down in the same field if I wished. Bees did well in this district in June, but July was so cold and dull they got nothing, but there has been a heavy flow from the second crops of clover during last week. I was on the moors on the 14th, and noticed that the bees preferred clover to heather. It seemed rather curious to me. It was a warm, dull day with a slight drizzle of rain now and then; I was in the midst of the heather several times, from ten till four o'clock, and it was blooming abundantly, but the bees preferred the clover. Two or three fields close to the heather were white with the bloom. There are good prospects of getting a super of clover honey before heather begins to yield. The latter also looks promising, for we had a heavy storm of much-needed rain on Saturday night, so with suitable weather we ought to have a record crop. TOM SLEIGHT, Danesmoor.

"ISLE OF WIGHT" DISEASE.

[8790] Having been an unwilling witness of the effect of this scourge in its varied forms amongst my bees, I should like to express my gratitude to Mr. H. Wigley for giving your readers the benefit of his experiments with sulphate of quinine. This treatment has checked the ravages of the disease in my apiary, and with perseverance I am hoping to eliminate it altogether. A curious fact which might be worthy of attention is that my three affected stocks are almost in line with one another, while at some distance behind, from south to north, the remaining six hives are scattered anyhow about the orchard, and are healthy; it would appear that the bees flying in a line as they do have contaminated this path, leaving the rest untouched. My advice to bee-keepers plagued with "Isle of Wight" disease is to have hives scattered irregularly about the apiary and to persevere with the quinine remedy. Until we get that most necessary Bee Diseases Bill through Parliament, this worst of all maladies will, in my opinion, be a constant menace to successful bee-keeping.—F. C., Oxford.

A COTTAGER'S EXPERIENCES WITH BEES.

[8791] I have kept bees more or less profitably for about thirty years, but until four seasons ago had never experienced in my own apiary any disease of bees. Since I have been in this district, however, I have been cleared out every year by "Isle of Wight" disease. This season I started with one poor little stock. In the Spring I was given a small bottle of "Bowen's Cure." I had tried almost every known remedy, and so decided to give that a trial. The rapidity with which that stock picked up tempted me to purchase two other stocks. These came about June 12th. I put them into a "Wells" double hive; each of the two divisions holds fourteen standard frames, but above the brood chamber there is about 7in. more room at the ends. These stocks I treated

with "Bowen's Cure," medicating all food and spraying (using an article such as hairdressers use) all frames of foundation or worked-out comb. These stocks worked splendidly and very shortly the hive was filled with brood. I gave them fourteen shallow frames, wide-spaced, in the drawers under the brood chamber (this drawer has no top, nor is there a bottom or floor-board to the hive). I put on the excluder, upon which I placed a box containing fourteen wide-spaced standard frames fitted with sheets of foundation, and on this a similar sized box of shallow frames, and then I went for a week's holiday. On my return I found a swarm had issued from one division and was lost, but two days after my return another fine swarm came off. I was able to spot the hive it issued from, so after extracting all the supers, also several of the frames in the brood chamber (these had a small patch of brood, so I did not return them to the brood chamber), I replaced these with frames of foundation, putting them in the centre of brood-nest, and put the removed frames containing the brood in the super above the excluder. Then killing the queen I returned the swarm. I extracted all these frames two and three times; then, wondering if anything was doing in the drawers under the hive, I found them both full of comb and brood and a few pounds of honey. On August 6th I took all supers off and made a final extraction, took seven frames from the brood chamber and sixteen out of the drawers. All the frames left in brood chamber are full of sealed brood and honey. Counting up my gains, I find I have sold 230lb. good dense honey. The single hive has its full number (fourteen) of frames in good condition and has given me thirty good sections. The uncompleted sections I am leaving on, as we have heather near. I firmly believe that "Bowen's Cure" has brought about this state of things. There are stocks in apiaries around me dying and dead of "Isle of Wight" disease. Might I ask if it is a usual state of affairs for the bees to fill up all the holes in the divider between the twin hives, and if so how can the odour of one stock reach the other? My divider is of nice pine, ⅛in. thick, with ⅛in. holes. If you should know of a poor brother bee-keeper who would like one of Abbott's "Little Wonder" extractors in good order I should be glad to give him mine, if he pays carriage on it.—G. H., Guildford.

[The propolisation of the wooden divider was one of the drawbacks to the "Wells" hives, and many who tried them found the same difficulty. We shall be glad to send on the address of any bee-keeper who would like to accept your kind offer.—EDS.]

AN INTERESTING OLD BEEHIVE.

[8792] Modern bee-keepers no doubt will be interested in the accompanying snapshot and in the account of bee-keeping as it was two hundred years ago.

The photograph shows bee hives which date back to that period. The hives are made of pitchpine and are provided with small doors with glass faces for the purpose of observation. The four are quite separate, but when the bees in the central hive required more space an iron sheet was removed from the sides in order that they might pass through a grating into the end hives.

The hives have been stored away for the last fifty years, but previous to that time

CURIOUS OLD BEE-HIVES.

they, together with six single hives, were in use on the farm of Mr. Locking, of Old Clee, Grimsby, whose ancestors have lived on the same land for over four hundred years. Mr. John Locking—John is the distinctive name of the head of the family—is seen in the photograph, and is well-known in Grimsby and the neighbourhood not only as a farmer, but as clerk of Old Clee Church, an office which his family has held for some centuries. They were noted mead makers, and it was no uncommon thing in olden days for visitors to come from long distances to sample the far-famed old mead.—J. W. E., Grimsby.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Nucleus Swarming.—The editor of the *American B.J.* advises the following form of carrying out this operation:—"Just as soon as the queen begins to lay, if there is any honey in the field you can make a good colony with a nucleus by

placing it on the stand of some fair-sized colony which has a sufficient supply of stores, but is not working in the supers, and place the latter on a new spot. In this way colonies which are not yielding either swarms or super honey may be compelled to build up the apiary without perceptible loss." Left to itself the shifted colony would yield no increase, by transposing the two both are worked up into strong lots for wintering.

"*The Liberty of the Subject!*"—In Texas, the entomologist in charge of the Bee Diseases Act has power to make such rules as he deems necessary. He can hinder the importation of bees, honey, &c., unless accompanied by a certificate; queens must not be sold or offered for sale unless the apiary is certified free of disease; and he can compel the transfer of bees from immovable comb-hives to movable frames." The editor adds in regard to this last clause: "This regulation, which looked at first tyrannical, is becoming popular all the world over." In free, democratic America they recognise that the law of the greatest good to the greatest number must prevail. With us, too, I hope common sense will conquer sheer perversity; and the day *must come*, sooner or later, when we will have our Act in force. Delays will only make those of us who have the good of the industry at heart more determined to press on to the only true goal—not a Bill, but an Act.

Doolittle's Dummies.—Mr. Doolittle believes in having two or three of these in each hive, and his procedure is as follows: "When the flow of nectar from white clover begins, and any queen does not keep the ten-frame comb-space occupied with brood, pollen, and honey, take out the unoccupied frames and insert a dummy in place of each frame taken out. This will throw the force of bees and the surplus nectar obtained into the sections right at the start, and practically ensure a good yield of section honey; while if the bees commenced to store the first nectar in the brood-chamber, little or nothing might be the result at the end of the season." Later on, at the end of the bass-wood flow, he again uses these dummies to concentrate the full force of bees on a smaller number of frames to hinder an overproduction of brood out of season. He even asserts that the use of these dummies means a gain of from one to two dollars a hive in an apiary of 100 colonies where blacks and hybrids are kept. There is undoubtedly a great deal in cultivating a habit in bees. Get them storing in brood-combs at the start and they will go on consigning the nectar there. Tempt them above—or, as he does, force them above—and they will attain a habit of storing in the supers. Another use for these dummies is contraction for the winter. Bees are placed on the number of frames which they can well cover before being winter packed, and the spare combs are kept in the honey-house to be brought out for spring stimulation.

"*Fancy Sections.*"—The front outside cover of *Gleanings*, July 1st, shows a lot of fancy and No. 1 sections. In this country I think every one of them would fall into the second grade. Defective and irregular sealing is very marked, and quite a contrast to what would be turned out by our native bees, who generally cap a smooth, even, and uniform surface. Italians and hybrids are far behind them in this respect, and on this account alone should be avoided by all who work for section honey.

The Beekeepers' Review also gives illustrations of fancy and No. 1, but both are a degree worse than those mentioned above. Mr. Townsend is the new editor of the *Review*. For the general reader this paper is now too much the organ of the National, and too little the guide, philosopher, and friend of the advanced bee-keeper it once was.

Co-operation.—This movement receives the editor's blessing, and, indeed, he places it first among the four great lines the National should work along. The idea is that car-loads of honey should be dealt with by some central agency, on behalf of the bee-keepers, and that by the same means car-loads of supplies should be distributed—the first at an enhanced price from what can now be obtained, and the latter at a much lower price than what is now charged by the more extensive wholesale firms. The other demands are: cheaper rates per rail, and a parcels post rate for bees with or without combs, and *National legislation*.

New Zealand Honey.—We are threatened with a large importation of New Zealand honey "branded" with the Government graded mark, but sent out by the Federated Bee-keepers. The first shipment consists of eleven tons, and a second similar quantity will follow in a month.

"*Bees Love Black.*"—"Why do bees dislike black? They don't!"—so writes Mr. Arthur C. Miller. In Providence his bees voice no antipathy to black winter cases. His assistant wears a black shirt and dark overalls, yet the bees are kind to Pat. White gloves are used by the bees as pincushions, and his friend "'iggins 'at," a brown one, got so stung that he "had to sandpaper the points from the inside in order to be able to wear it!" *Black* bees are not stung by Italians, &c. Hogs, black and white, come nearly up to his hives, yet the bees never molest either of them. Cattle of all colours congregate near the hives, but the black ones are as immune from stings as

the red or the white, yet grey mules have to pass at double quick time. A bee-keeper near has a partly black pet cow. "The bees apparently do not know the cow exists. They sting the bee-keeper, but not the cow." Another apiary is operated by a black man, a real *black* black. The white man got the stings, the other escaped scot free. Mr. Miller evidently believes in the "odour theory" here, for he lays the blame on the odour, not the colours. Repeatedly I have sought to demonstrate the truth of this contention. I never discovered that black hats, veils, or clothing brought stings my way.

Queries and Replies.

[8797] *Feeding Driven Bees.*—I shall be much obliged if, through your paper, you can give me information on the following points:—(1) Should driven bees be given as much thick syrup as they will take down during this month, or should they be only lightly fed at present, and as much as they will take later on? I presume, if fed heavily just now they might fill all cells and so prevent the queen laying late? (2) Would your answer to the above also apply to established stocks which are short of food and have not drawn out all the frames of foundation into cells? (3) I am feeding with syrup made up of 10lbs. of sugar, 5 pints of water, 1oz. of white vinegar, and ½oz. of salt. The syrup seems to crystallise a great deal in the solution, and at the bottom of the jars the syrup is put in there is often a deposit of sugar 1in. deep. Is this as it should be? —Sonso, Byfield.

Reply.—(1) Feed moderately to enable the bees to build combs and rear brood, and leave the rapid feeding until the middle of September. (2) Yes. (3) The sugar must be thoroughly dissolved and the syrup boiled for a few minutes. The deposit shows that it has not been properly dissolved. The proportions are correct for autumn food, but we should prefer the syrup thinner for stimulative feeding and would recommend 7 pints of water.

[8798] *Leaving Supers on until September.*—I extracted my shallow frames in July and returned them to the hive, intending to take them off for good on August 8th and following days. The bees, however, appeared so crowded in the hives left superless that I decided to leave the latter on until after my return home, on September 12th. (1) Is this correct? (2) If it is, is it possible to give slow stimulative feeding on the supers, or will the bees fill the supers with the syrup?—C., High Wycombe.

Reply.—(1) Yes, you can leave the supers on as your stocks appear to be strong. (2) If you wish to give slow stimulative feeding you must, of course, remove the supers, and if the bees are too crowded place a 3in. eke under the hive.

[8799] *Hiving Swarm.—Bee-plant.*—I shall be glad if you will advise me on the best means of dealing with a swarm of bees which came off early in June, and was left in a skep until I had a hive for them, which was about three weeks later. I then adopted the method of hiving given in the "Guide Book," namely, spread a sheet on the alighting board extension and ground in front of hive, and shook most of the bees out of the skep until I thought I saw the queen go up with the other bees. I then put on an excluder over the brood-frames and the skep upon that. I find, however, that the bees have not started working in the frames, which are fitted with foundation, and are just as when first put in, so I conclude the queen could not have left the skep. I to-day took off the excluder, gave the floor-board and interior of hive a good clean, and replaced the skep so that the queen can now get down. I may add the skep seems full of bees. (2) I shall be glad if you will tell me the name of the clover enclosed, and whether it yields much nectar? There is a quantity near the hives, but do not see many bees on it. —E. B., Birmingham.

Reply.—(1) The method you adopted was useless at the end of three weeks. We expect you broke the combs in the process and a good many bees were drowned. You should either have driven the bees and hived them into the frame-hive, doing away with the skep altogether, or let the bees stand as they were till next spring. You must now do the latter, as they will not work down. About April treat as described on page 149 of "British Bee-keepers' Guide Book." (2) The plant is "Yellow Trefoil" (*Trifolium procumbens*) and is not a good nectar-yielder.

[8800] *Destroying Bees. — Syrup-making in Copper Boiler.*—(1) When using the sulphur squib as described in last week's "Helpful Hints to Novices," is there no danger of setting the frames or quilts on fire? (2) I presume that the squib is put in lighted end down, therefore will not the sulphur fall out? (3) I have bought a copper boiler for making syrup. Will it be safe after the syrup is made to leave it standing in this, and only draw off as required, lighting a small fire underneath each evening to warm it up, or will the copper affect the syrup?—A. B. C., Kent.

Reply.—(1) Not if the instructions are carefully carried out. (2) The sulphur cannot fall out if the ends of squib are

plugged as stated. (3) No, it will not be safe to leave the syrup standing in the copper boiler, as the acid will act on the metal and produce poisonous salts. The syrup should be removed immediately after boiling, and the copper cleaned out. You must keep the syrup in glazed vessels.

[8801] *Removing Bees from Tree.* A colony of bees entered a tree about two years ago on my farm, and a swarm has issued this year, so I think there must be a virgin queen left. There is a hole underneath the entrance of the nest about two to three feet below, into which I could blow smoke. Do you think I can succeed in removing them into a skep. I am willing to take some trouble if I may succeed, as I am only a beginner.—DAVID DAVIES.

REPLY.—Prepare a small colony or nucleus in a light box. Blow some smoke into the hole by which the bees enter the tree, and erect a platform close to it. Then fix a Porter escape on flight-hole of tree, so that the bees can come out but not get back. Place the nucleus on the platform with its entrance as near the Porter escape as possible. When the bees leave the tree they will find that they cannot return, and one by one will enter the nucleus. In four or five weeks the queen in the tree will have very few bees with her and these can be destroyed by blowing in with the smoker sulphur fumes, after removing the escape. In the course of three or four days the bees in the nucleus will remove the honey out of the tree and store it in the nucleus hive.

[8802] *Dealing with Non-standard Frames.*—Having bought a hive full of bees, and conveyed them across London without any other instruction than that contained in your Guide Book, I now find that there are one or two queries which I cannot settle to my own satisfaction, and I shall be very grateful if you will give me any information.

(1) I find that my ten frames, which are nearly all full, are fixed in the inner brood box from left to right instead of from front to back as appears to be customary. The rear frames are not standard, and are propped up with small pieces of wood to keep the bottom of the frames from touching the floor-board. Would you advise turning the inner brood box round bodily, or is any trouble likely to result if I take the frames out and reverse them. The modern method seems much better as far as facility for the bees to get in and out of the hive is concerned, but my arrangement may give greater warmth in winter.

(2) As to quilts. The hive is a W.B.C. pattern, with ventilators in the super box. At present with a rack of sections fitted over the brood box it has been necessary to close up the space at the sides of the sections with cloths to keep the queen from coming round that way. Also the quilts fill the top of the hive completely over. Is this right, and if so, of what use are the ventilators?

(3) Can you tell me if there is any apiary in this neighbourhood, where I might acquire information on such matters as those I have mentioned.—F. J. M.

REPLY.—(1) Turn the brood chamber round as you suggest, and gradually work out the non-standard frames. (2) We do not quite understand what you mean by ventilation in the super box, do you not mean the roof? In some supers small holes are made just under the lugs of the frames, to allow bees which get trapped there to escape. If you use a rack built out at the side, see Guide Book, page 56, so that it is the same size as the brood chambers, there will be no need to pack with quilts. Also they can be used in conjunction with shallow frame supers. The top quilts should not project more than half an inch on all sides of the brood chamber. (3) If you apply to the Sec., B.B.K.A., 23, Bedford Street, Strand, W.C., you will obtain particulars of the free lectures in the Society's Apiary in the Zoological Gardens, Regent's Park, N. W.

[8803] *Beginner's Queries.*—I purchased a hive of bees last March with the object of improving my fruit crop, and in June I had one moderate swarm, and two after—swarms, which I put into a "W.B.C." hive on ten frames, and there they are now working away as hard as they can. (1) Should I take any honey from that hive this year? (2) The original hive, I found on examination, had frames not standard size, being much shorter; now I should like to get the bees out of that hive into a "W.B.C." I cannot shift the frames because they will not fit, so if you would advise me how to proceed I shall be very much obliged.—W. G. R., Portsmouth.

REPLY.—(1) It is possible, but not probable, that you will obtain surplus honey this year, unless it is from the heather. (2) Let the bees alone until next spring, then deal with them as described on page 149 of "British Bee-keepers' Guide Book," treating the frame-hive as if it were a skep.

[8804] *Bee-keeping as a Livelihood.*—Being an enthusiast with regard to bees, and everything connected with them, even to hive-construction and frame-making, and being very fond of woodwork as well, I wish to ask your advice on a few points on which I am doubtful. I do not keep any bees myself, but have visited

several apiaries, and love to be among them. The frames and hives I am making are to start with next year, D.V. (1) Is it possible to make a business of bee-keeping in this district, that will bring me in sufficient income to live on with my wife? (2) How shall I commence? I have decided to start with four stocks of bees, but what kind of bees would you recommend me to purchase (as some advise one kind, and some another)? (3) I am very hard working, and feel sure I should be successful, and as I expect the firm I am working for to give up business in a few years, I wish to have something to fall back on. I also think I shall keep poultry as well. We have plenty of clover and wild flowers around us, and I think I could secure quite a quantity of honey from bees. Mr. Cowan will know this country well. Thanking you in anticipation, and wishing success to your valuable paper.—F. T., Somerset.

REPLY.—(1) Owing to the vagaries of our climate, we do not think you would succeed with bees alone. (2) You had better start in the spring with swarms. Four will be quite sufficient, let your stocks grow as your knowledge and experience increases. Stick to British bees. (3) If you combined, say fruit growing, poultry keeping, or dairying with bee-keeping, no doubt you could make a living.

[8805] *Utilising Inferior Honey.*—To what use can honey, very much discoloured with honey dew, be put? Will it make mead? Is it safe to feed back to bees for winter use? Honey-dew has been very prevalent in this district this season, and has spoilt a tremendous lot of honey for sale, some being quite black. R. L., Briston, Norfolk.

REPLY.—You could probably sell the honey for medicinal or manufacturing purposes. If well boiled it might be used as food for bees. We should hesitate to use it for mead, as it would not give good results.

THE NYASA BEE.

(*Continued from page* 297.)

I have found the death's head moth, *Sphinx atropos*, about my hives, and one inside. They cause a lot of irritation if they get at the bees.

The Bee Pirates (*Philantus*) have been successfully fought by me with the oil trap. In April, I got about 450, and in May, 250. The record for one day was fifty-two. I found that the dead bees in the plates did not exceed one-tenth of the number of the *Philantus*, and are therefore negligible. It remains to be seen how it will work in the hot season.

The bees are practically helpless against this enemy, as he is too hard for their sting to penetrate. If the *Philantus*, however, tries to take away a bee from the cluster on the alighting board, the others quickly but surely close on him, ball him, and in about ten minutes he is dead. They do not enclose him so firmly as they ball a queen, and I am unable to explain how they kill him, though I have seen it done several times. But generally the *Philantus* is wise and does not take a bee unless it is alone.

A friend of mine tells me that on lake Tanganyika, the bees are similar to those here, and I gather that in German East Africa they are the same. I wonder what is really their species. Could they be *Apis Adansonii*?

Besides these bees, there is another honey gathering insect here. There are two varieties, a smaller and a larger. Only the larger gathers enough honey to be worth looking for. The natives call it Ukama. It does not sting, looks like a black ant with wings, lives in holes of any sort, but hides its abode well, and is difficult to find. It carries pollen on its hind legs. It may belong to the Trigones. It makes honey like that of our bees, sometimes the store holds quite a bucketfull. Their comb, if I may call it that, is of a dark brown greasy wax, placed horizontally it seems, not in nice flat perpendicular pieces like our bee.

Its only advantage over our bee would be that it does not sting. I hope to get a colony or two this season, and will see what I can do with them.

It might interest BEE JOURNAL readers to hear that specimens of the Nyasa Bee—workers, drones, and queens—are being sent to the Imperial Institute, London, where they can be seen by anyone interested.

I should like very much to know what variety our bee really is. It is spread so widely over Africa, and lives in such enormous quantities, that I cannot think it is unknown in Europe. By the description of various races which Hommel gives, it seems to have most similarity with the Egyptian bee, *Apis fasciata*. But you will have more literature accessible, and perhaps can tell me better.

[We cannot say from your description only.—EDS.]

As it seems to be undisputed that shallow frames produce better extracted honey, why are not these used exclusively for surplus as well as brood? The bees would hardly mind, and they would be easier to handle, besides being interchangeable.

Also I should like to know why the "new tall sections," 4¼in. by 5¼in. by 1⅝in., are not used more. I should say that, especially if placed with the long side horizontal, they would be finished and sealed sooner than the 2in. sections.—L. W. J. DEUSS.

Bee Shows to Come.

September 2nd, 3rd, and 4th, at Newcastle-on-Tyne.—The Northumberland and Durham Bee-keepers' Associations, in conjunction with the Durham, Northumberland, and Newcastle Horticultural Society's Show. Schedule from Hon. Sec., the N.B.K.A. Wooler; the D.B.K.A., Butterknowle; or Sec. of Horticultural Society, 24, Grainger-street West, Newcastle-on-Tyne.

Deddington Horticultural Society 5th Annual Flower Show, Tuesday, September 2nd.—Honey class open to the kingdom. Schedules from Mr. H. J. Harmsworth, hon. sec., Deddington. **Entries close August 28th.**

September 3rd, at Lancaster.—Lancaster Agricultural Society. In conjunction with the Lancashire B.K.A. Classes for honey, bee produce. Specials, including two silver challenge cups, two silver and one bronze medals. Write for honey schedule to Robert Gardner, 69, Church-street, Lancaster. Tel. 106. **Entries close August 27th.**

September 4th, at Abington Park, Northampton. Northants B.K.A. Annual Honey Show. Special prizes for open classes, including one for single 1lb. jar. Entry free. Schedules from R. Hefford, Kingsthorpe, Northants. **Entries close August 28th.**

September 12th and 13th, at Nottingham.—Grand Exhibition of Appliances, Honey, Beeswax, collections of objects of interest and instruction, Demonstrations, &c., &c., to be held in the Mechanics' Hall, Nottingham. Open classes, with liberal prizes for appliances, extracted honey, sections, fitting-up frames, fitting-up sections, judging competition, &c., &c. Schedules from G. Hayes, Mona-street, Beeston.

September 13th, at Conway, North Wales.—Annual Honey Show in connection with the Conway Honey Fair. The Conway Honey Fair has been annually held for centuries. Great opportunity for visiting one of the most historical districts of Wales. Open and local classes. Special prizes. Schedules from J. Hughes, Town Hall, Conway. **Entries close September 9th.**

September 18th, at Castle Douglas.—Annual Show of South of Scotland Bee-Keepers' Association, will be held in connection with the Dairy Show, Castle Douglas. Five open classes; Three 1lb. jars extracted 20s., 10s., and 5s.; three sections, ditto. (Entry 2s.) 1lb. jar, also one section, 5s., 3s., and 2s. (Entry fee, and exhibits retained unless otherwise agreed upon.) Beeswax, 5s. 3s., and 2s. (Entry 6d.) Fourteen classes for members. Schedules from J. M. Wilson, Craig View, Noble Hill, Dumfries. **Entries close September 3rd.**

September 20th to 27th, at Royal Agricultural Hall, London.—Twenty-first Annual Exhibition of the Grocery and Allied Trades Honey Section under direction of the British Bee-keepers' Association. All open classes. Special prizes (see advertisement). Schedules from H. S. Rogers, Secretary, Palmerston House, Old Broad Street, London, E.C.

September 24th, at Altrincham.—Honey Show, under management of Cheshire Bee-keepers' Association, in connection with Altrincham Agricultural Society's Show. Four open classes. Schedules from J. H. Hall, 1, Market Street, Altrincham, Secretary. **Entries close September 6th.**

Sept. 24th and 25th, at Kendal.—The Annual Show of Honey, Wax, and Appliances of the Cumberland and Westmorland B.K.A., in connection with the Northern Counties Fruit Congress, in the Market Hall, Kendal. Eleven open classes. Liberal prizes. Note.—All prize-money will be paid on second day of show. Schedules from G. W. Avery, Wetheral, Carlisle, or Geo. Chatham, Low Green, Staveley, Kendal.

September 25th, at Horniman Hall, North End, Croydon.—Exclusive show of Honey, Wax, Hives, Bees, &c. Increased prizes. Six open classes. Entry fees 1s. each class. Judge, W. Herrod, F.E.S. Schedules from A. Wakerell, 83, St. John's-road, Redhill.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

July, 1913.

Rainfall, 2·40 in.	Minimum on grass, 38 on 14th & 23rd.
Above average, ·13 in.	Frosty nights, 0.
Heaviest fall, 1·25 on 6th.	Mean maximum, 65·3.
Rain fell on 13 days.	Mean minimum, 51·0.
Sunshine, 156·1 hrs.	Mean temperature, 58·1.
Below aver., 78·5 hrs.	Below average, 2·6.
Brightest day, 25th. 13·3 hrs.	Maximum barometer, 30·397 on 1st.
Sunless days, 4.	Minimum barometer, 29·695 on 6th.
Maximum temperature, 75 on 31st.	
Minimum temperature, 45 on 9th & 14th	L. B. BIRKETT

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

BLACK BEE (Worth).—*Bees not Working in Sections.*—Your bees are within reach of the heather, and all you can do is to reduce the number of frames in the hive and close up so as to force the bees into the super. As you only want so few sections give them one row, and if the colony is strong enough, and nectar plentiful, you ought to get what you want.

L. ILLINGWORTH (Essex).—*Uniting Bees.* Remove the queen you do not require and proceed to unite with flour as described in "Guide Book" (page 105). It is the simplest method, and there is in this case no need to cage the queen. The uniting can be done now.

INTERESTED (Tweedmouth).—*Bees Destroying Combs.*—When bees have nothing to do they sometimes bite down the combs and make holes in foundation, or when robbing is going on this frequently happens.

ZEMO (Staffs).—*Restocking Apiary after "Isle of Wight" Disease.*—You could start again next spring with safety. Buy bees in the neighbourhood, as they are more likely to be immune than if you bought from outside.

J. DRAPER.—*Driving Bees from a Hedge.*—To one oz. of carbolic put two ozs. of water. We do not deal in

bees or appliances of any kind, if you refer to our advertisement columns you will find plenty of driven bees advertised.

W. X. A.—*Queen not Laying.*—The queen is a young one, and has not been mated. We presume you have lost a swarm.

W. Ebbs.—*Expert Examinations.*—There is no stipulation as to time for third and second class examinations, but for the first at least three years' practical experience must have been gained.

W. Simmons.—*Bees in a Roof.*—We should say there will be a considerable amount of honey in the roof.

R. H. Day.—*Using Apicure.*—Much depends upon the weather. In warm weather Apicure tablets will evaporate in about three weeks; in cold weather it will take perhaps three months. You must continue its use until the stock is cured. It is better to let it drop on the floor board at the back of the hive rather than under the lugs of the frames.

Suspected Disease.

Durham.—The bees are afflicted with "Isle of Wight" disease.

Honey Samples.

A Reader for Many Years.—The honey is a very good light sample from clover. It lacks a little in density, but is certainly worth a trial on the show bench.

C. H. (Wilts).—Honey of pleasant flavour and good colour. It, however, appears unripe, and will probably ferment if kept.

G. H. M. (Staffs).—There is no trace of lime honey in either of your samples. No. 2 is best in flavour, and No. 1 in density. We should not call No. 1 a *good* exhibition honey, though it might win prizes at local shows.

G. T. J. (Dolgelly).—No. 1 honey is from mixed sources, heather predominating. It is of nice flavour, and should be shown in dark honey class. No. 2 is a nice heather blend. Both, however, are lacking in density. (2) You must not put labels on your jars for show purposes. Only a small ticket with number of your exhibit is allowed.

H. L. (Westmorland).—Your sample is from mixed sources, and contains some heather. It is rather thin, but of nice flavour. Should be shown as a medium-coloured honey.

Kingswood (Surrey). No. 1 sample is a good lime honey. No. 2 is from mixed sources, including limes. It is worth about 9d. per jar, or 6d. per lb. in bulk.

Agricola (Lancs).—Sample is very good in colour, but rather lacking in density. The flavour is pleasant at first, but there is an after taste which is rather peculiar. It is good enough for showing, and should be entered in the light honey class. Worth 56s. per cwt. or 10d. per 1lb. jar.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

FOUR strong lots healthy driven bees, 2s. 6d. each.—CLARKE, Gad's Farm, Acton, Sudbury, Suffolk. v 74

FOR SALE, overstocked, four strong, guaranteed healthy stocks; particulars.—ROBINSON, The Lonning, Dalston, Carlisle. v 61

FOUR healthy stocks, June, 1913, in boxes, 15s. each.—RAYMOND A. BUTTRESS, Lazerton, Stourpaine, Blandford. v 63

WANTED, wax extractor, in sound condition.—TILLING, Hessenford, St. German's, Cornwall. v 64

FOUR American Langstroth hives, with frames, 4s. each; 100 shallow frames, with worked combs, at 4s. per twenty; one screw honey press, 9s.—HEATON Methwold, Norfolk. v 65

WANTED for lecturing purposes, set of lantern slides on bee-keeping.—Apply, stating price, to JULIAN E. LOCKWOOD, Model Apiary, Hunstanton. v 66

WORCESTERSHIRE HONEY.—3½cwt. at 45s. per cwt.; sample free.—A. BONELL, Witley Court Gardens, near Worcester. v 67

2CWT. finest extracted honey, 60s. per cwt., f.o.r., cash with order; sample, 2d. stamps; tins, 1s. each returnable.—N. ALLEN, Wicklow Mount, Vigo-road, Andover. v 71

APIARY.—Two strong stocks, in good hives, 22s. 6d. each; new painted hives, 9s. each.—104, Grosvenor-road, Harborne, Birmingham. v 73

SALE or EXCHANGE, euphonium, B flat, Higham, Manchester, splendid instrument.—BANDMASTER, Southwell, Notts. v 72

EIGHT stocks of healthy bees, in 12-frame hives, on ten frames; inspection invited; also 1cwt. of extracted honey.—J. RAMM, Eastington, Cirencester, Gloucestershire. v 48

"ISLE OF WIGHT DISEASE."—To owners of infected stocks, and those wishing to prevent infection, we invite applications for free circular describing an entirely new and extensively tested inexpensive cure and preventive of this scourge.—Write, ALFRED FRENCH, Richmond-road, Cambridge.

TWO STOCKS ITALIAN BEES, healthy, wired frames, 25s. each, or exchange honey.—JULIAN LOCKWOOD, Hunstanton. v 57

FEW dozen sections, good, for sale; what offers?—HILLS, Enford, Wilts. v 58

REMOVAL; 6 hives bees, clean, 1913 queens, 25s. each.—HULBERT, Hermitage, Worcester. v39

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

SECTIONS WANTED, glassed or unglassed, by HONIELADE CO., 23-25, Moorfields, London, E.C. v 60

BOWEN'S, Cheltenham, "I.O.W." cure, remarkably successful, 1s. 6d. Coronation, Cheltenham. v 62

Editorial, Notices, &c.

SOMERSET B.K.A.

ANNUAL SHOW AT BRUTON.

The Somerset B.K.A. held their annual show, under very favourable circumstances, on August 7th, at Bruton, in connection with the local flower and vegetable show. The weather was beautifully fine and everything that could be wished for. The honey tent, and also the County Council demonstrating tent, was the centre of attraction most of the afternoon. The bee-products showed a record entry, if we exclude the exceptional entry of 1911, and the honey was of a very fine quality throughout the show. The judges, Thos. Wm. Cowan, Esq., and S. Jordan, Esq., had a by no means easy task in deciding which of the 108 exhibits that were staged deserved the awards.

The following were the successful competitors:—

OPEN CLASSES.

Display of Honey and Wax.—1st, H. J. Moore, Radstock; 2nd, F. Kirby, Whitchurch; 3rd, E. J. Harvey, Evercreech.

Twelve Jars of Extracted Honey.—1st, A. H. Bowen, Cheltenham; 2nd, F. G. Hales, Bath; 3rd, F. Kirby; 4th, G. W. Kirby, Bristol; h.c., H. J. Moore; c., C. W. Dyer, Newbury.

Twelve Sections.—1st, C. W. Dyer; 2nd, H. J. Moore; 3rd, F. Kirby; 4th, E. J. Harvey.

Single 1-*lb. Jar of Honey (Gift Class).*—1st, W. Patchett, Cabourne; 2nd, Misses A. and S. C. Smith, Taunton; 3rd, Miss Hole, North Tawton; 4th, A. H. Bowen; h.c., F. G. Hales and H. J. Moore.

Single 1-*lb. Section (Gift Class).*—1st, C. W. Dyer; 2nd, H. J. Moore; 3rd, B. L. Rayes, Glastonbury; 4th, E. J. Harvey, h.c., W. Evans, Wincanton.

Exhibit of a Scientific Nature.—2nd, W. A. Carver, Castle Cary.

RADIUS OF TEN MILES CLASSES.

Six Sections Comb Honey.—1st, T. Hale, Shepton Montague; 2nd, W. Evans; 3rd, E. J. Harvey.

Six 1-*lb. Jars Extracted Honey.*—1st, E. J. Harvey; 2nd, W. Evans; 3rd, W. A. Carver; h.c., V. Davis; c., Mrs. Bindon, Bruton.

MEMBERS' CLASSES.

Beeswax (not less than 1-*lb.).*—1st, W. A. Carver; 2nd, E. J. Harvey; 3rd, W. Evans; h.c., F. Kirby.

Three Shallow Frames of Comb Honey.—1st, F. G. Hales; 2nd, W. A. Carver; 3rd, F. Kirby; h.c., H. J. Moore; c., E. J. Harvey.

Exhibit of Honey Products.—1st, F. Kirby.

Three Jars of Granulated Honey.—1st, W. A. Carver; 2nd, H. J. Moore; 3rd, F. Kirby.

Six 1-*lb. Sections.*—1st, H. J. Moore; 2nd, F. Kirby; 3rd, B. L. Rayes; h.c., L. Case.

Six 1-*lb. Jars of Extracted Honey (Light or Medium).*—1st, H. J. Moore; 2nd, F. Kirby; 3rd, F. G. Hales; v.h.c., W. Carver; h.c., B. L. Rayes; c., L. Case.

Six 1-*lb. Jars Dark Extracted Honey.*—1st, W. A. Carver; 2nd, F. Kirby; 3rd, W. Evans.

Collection Six 1-*lb. Sections and Six Jars Honey.*—1st, H. J. Moore; 2nd, F. Kirby; 3rd, W. Evans.

NOVICE CLASSES.

Three 1-*lb. Sections of Comb Honey.*—1st, V. Davis; 2nd, T. Hale; 3rd, L. Case; h.c., Mrs. Allen.

Three 1-*lb. Jars Extracted Honey.*—1st, F. Kirby; 2nd, L. Case; 3rd, V. Davis; h.c., E. Williams; c., H. Evans, Bruton.—R. LITMAN, Hon. Sec.

THE "HONEY SHOW" SEASON.

The next few weeks are of importance to the bee-keeping world, as during that period the "big" shows of the year take place, namely, the "Grocers'" and, later, the "Dairy Show." So many bee-keepers have secured good honey this season that the entries at both shows should create a record, but it is astonishing how apathetic many are with regard to exhibiting, though they are usually keenly interested in the honey exhibits when visiting the shows. It is an advantage to enter honey at the Grocers', where absolutely the very best bee-produce is staged, even if no prize comes one's way, for the experience gained by competing in such company cannot fail to improve one's method of putting up our produce. Again, not only the prize exhibits are noticed by purchasers; there are many of the latter who go round and judge for themselves, so there is always a chance of securing a new customer. We hope readers will remember that entries for both these shows will be too late unless schedules are applied for without delay. (See our advertisement columns for dates.)

AMONG THE BEES.

By D. M. Macdonald, Banff.

AUTUMN FEEDING.

A point bulking largely in securing safe wintering is little understood. Populous hives are important, but we who work for the heather know that there are bees *and bees* at the close of that late bloom. The hive may be almost overflowing, so that when we confine them to the full complement of frames after surplus chambers are withdrawn they may block every

corner. Examine these frames, however, late in October, just before winter sets in, and the chances are you will find a very considerable diminution in the number of the inhabitants. The greater proportion of those bees who bore the burden and heat of the day during the last part of the heather flow are worn out, and have laid them down to die, or will do so before much of the winter is gone. Consequently the colony gets rapidly depleted just at the time when a strong force is essential to successful wintering. It is not so much more numbers that tell as the vitality of those left. Old worn out bees are little use, while young and vigorous ones are the life of the colony. Where a late flow exists, breeding is kept up well until the very approach of winter, and as a result the larger proportion of the wintered bees are full of energy in spring, because almost every bee is either unworked, or has been a forager only for a very brief spell.

Heather men will have observed that in a season when some hard frost or rain flood has cut off the supply of nectar, prematurely and abruptly, the queens suddenly cease ovipositing. As a result, for a period of about a month or six weeks, no young bees are hatched. Under such circumstances almost every bee in the hive is aged or tending that way before winter approaches. When, however, there is a slow gradual cessation of bloom foragers carry in just so much nectar as not only saves any lessening of stores, but sufficient to keep on steady breeding during September and early October. These late batches of brood (not too late in being reared) are the very life and soul of the colony when spring arrives.

Bearing this in mind, it pays to look after every colony in the way of stores during autumn. Where the honey season is over by the end of July, and when the heather flow is cut off prematurely before August closes, it is advisable to supplement Nature's supplies by feeding the bees. Of course, stating this is a mere truism of the most elementary kind, but many will bear me out that it is often neglected. Some even argue that, given a stock yielding a large surplus, it can require no aid or care from its owner, while the fact often is that it is the very one requiring attention in early spring, which might with far greater benefit have been given in late autumn. Its very success may have been brought about by a depletion of stores in the brood body, where they are necessary for safe wintering. Further, its very strength may prove its undoing because of the heavy drain on stores consequent on the many mouths to feed in the possibly long period after nectar ceases until winter sets in. Guessing at the amount of stores is no good, and even reasoning from what one given colony has on hand does not aid in properly diagnosing what others have. Every individual colony should be tested before being winter packed.

Now, taking for granted that almost every one has to be fed less or more—some only a few pounds, others perhaps ten, and yet others twenty pounds—the question arises how should we feed them? Bearing in mind the point I have made above of the value of young bees as safe winterers and energising forces in spring, would it not be well to secure a large proportion of these? Remembering that sugar can be turned into bees, and that stimulating with syrup encourages breeding, we can keep up the vitality of the queen right on from the cessation of the natural flow until we deem it is time for her to cease ovipositing. Let this period not be too late for three reasons. Late reared bees are *soft*, stored syrup should be capped before winter sets in, and the workers not only like to arrange themselves in a proper cluster before cold, but they consider it essential to have their stores put into proper order for future contingencies.

I am presuming that only *ounces* have been supplied during this period of stimulation, and, moreover, that little, if any, of it has been stored, most of it going to make bees or to keep the workers living from hand to mouth without any meddling with sealed stores. This *slow* feeder with its regulated supply is withdrawn from the hive, and a rapid feeder substituted. A large one can contain ten to twenty pounds of syrup, so that the necessary supply can be given in one or two nights to make up any shortage of the 25lbs. or 30lbs. deemed necessary to provide ample winter stores. Thus the agitation consequent on rapid feeding will quickly subside. It may even be best to feed only a certain proportion of the whole and make them store combs to be conveyed to the other hives requiring making up

The food supplied must be made from the best materials and prepared most carefully. Especially for winter feeding, never use cheap beet sugar, as it may bring about a weakening of the system leading to dysentery in Spring. Make the syrup thick, if fed late as thick as you can, as then bees cannot well evaporate the excess of moisture in thin food. Five pints of water to ten pounds of sugar is the usual formula, but if the date is late make it one pint to two and a half pounds. Boil the syrup, stirring carefully until sugar is all melted, and place it in the feeder on the hive late in the evening in a luke-warm condition, so warm that you can just leave the finger in for some time.

A MODEL APIARY.

We are indebted for the following account of a model apiary to Mr. Alfred Edge, of Bridgnorth, who visited it lately, and took some photographs, one of which we reproduce. The subject of the article, as well as Mr. Edge, is a member of the newly-formed Bridgnorth and District Bee-keepers' Association, which, under the capable administration of Mr. J. Lawton, the Secretary, is doing good work among bee-keepers in that part of the country.

The Association has just held its first honey show, which was a most successful affair altogether, and reflects great credit upon all concerned.

"Nestling in the valley of the Severn is the quiet little village of Quatford, near Bridgnorth; here may be seen one of those model apiaries which we read about in text books, but which too rarely exist in actual fact.

"It is sheltered from the cold winds of the north and east, in one of those little woodland dells 'where the fairies dance 'neath the midnight sky, and the bees hold revel 'neath the midday sun.' In this delightful situation is to be found the apiary of Mr. Henry Hulme.

"The man himself has an interesting personality; of middle age he has had many and varied experiences crowded into his life. He is employed now as working bailiff by the Rev. Archdeacon Bevan, Quatford Castle. Mr. Hulme served with the Worcester Regiment in the South African War for two years and four months, and holds two medals for that campaign. He has a fund of anecdote ready to hand respecting his South African experience, as during his leisure intervals he wielded with some dexterity (although only an amateur) the implements of tonsorial art upon Boer and Briton alike; sometimes he received payment for such services in "coin of the realm," but often enough a cheque upon the bank of "Gratitude and Thanks, Ltd.," was sincerely given and just as cheerfully received.

"It is a little over five years since he commenced bee-keeping, when he captured a swarm in a hedge. A gentleman gave him a book on bees and bee-keeping, which he read, and became deeply interested. He bought a "W.B.C." hive for this swarm, but nearly all his other hives have been made by himself.

"His motto in bee-keeping, as in other things, is 'thorough.' He has appliances of every kind, a place for everything, and always ready for use. When manipulating his stocks, he takes his box with him, containing smoker, carbolic cloth, ammonia, scraper, &c., &c.; this he terms his 'assistant,' and one always to be relied upon.

"In the photograph he is seen manipulating one of his hives. It will be noticed that a fountain of water, constantly dripping into a stone trough, supplies the apiary with this very necessary commodity. Every hive is neatly made and

MR. H. HULME'S APIARY, QUATFORD, BRIDGNORTH.

painted—not a sun-crack in any of them—the insides are just as neat, every quilt, whether it be of calico, bed-ticking, or chaff, or cork-lined, is a model of cleanness, and as exact and smooth as a fresh-made bed.

"The writer was greatly interested when shown through the bee-house recently. Everything was scrupulously clean and in perfect condition whether it be extractor, ripener, drawn-out combs in brood and shallow frames, no propolis upon the bars or metal ends, and no wax-moth either.

"Although the apiary is only a few feet from the dwelling-house, only once have the bees attacked members of his family in the house. Upon this occasion they were very fierce indeed, and attacked a brood of young turkeys, stinging five to death and two pigeons, while Mr. Hulme himself was badly stung, as he was not wearing a veil, and to escape from the angry insects he leaped head foremost into a water-tank.

"Mr. Hulme states that he has made a little profit each year, while this season he expects to reap a much greater sum, as his hives have given him a large surplus. This little apiary is well worth seeing, and brother apiarists are always sure of a hearty welcome if they find Mr. Hulme at home."

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

TREATING "I.O.W." DISEASE.

[8793] Having been away from home for some time, I have only just noticed Mr. Crawshaw's comments on my suggested system of dealing with "Isle of Wight" disease (page 317).

I am glad to note that he agrees with me in thinking the system a sound one for the elimination of disease, and his failure to extract sympathy from the authorities extracts mine.

I think Mr. Crawshaw will agree that the system I proposed is even more drastic than his own; the essential feature of my proposal being a complete isolation of the bees from their previous surroundings, this isolation being twice effected: first, by driving the bees into an empty receptacle and next by hiving them on entirely new foundation, antiseptics being constantly kept acting on them during the process.

With regard to the old combs being retained, I agree with Mr. Crawshaw that in most cases it would be safer to get rid of them immediately. Nevertheless, I very much deprecate the unreasonable panic-stricken state of mind which will sacrifice valuables which are not in the least likely to convey infection. In the first place, it is unlikely that the cleaned up combs contain any spores, unless we are dealing with an obviously badly infected stock. Assuming that they do, spraying with formalin is pretty sure to dispose of them, but if this does not, surely a year's rest would serve to render them harmless, especially if they were occasionally warmed up and re-sprayed.

Of course, I only refer to combs which are good and worth using again, such combs as one naturally sets store by.

It is sad to see a whole page of "Helpful Hints" given up to detailed instruction on the methods of killing bees. May it not be pertinent to enquire what success those who advocate this course have had? We who believe in curing are continually being invited to give chapter and verse or to show good reasons for the hope that is in us. Perhaps someone who has, say, twenty, fifty, or a hundred colonies, who has systematically destroyed the first stocks and the second stocks, and so on as they have been seen to be affected, will let us know how many stocks escaped during a period of, say, two years. Who will give a lead off?—HERBERT MACE.

[The article in question was written in response to requests for a humane and efficacious means of destroying condemned bees. It is necessary to destroy bees sometimes, and this is so often, through ignorance, done in a needlessly cruel manner that we thought it an opportune time to give the proper method in print, so that it might be referred to when necessary.—EDS.]

A NOVICE'S SUCCESSFUL SEASON.

[8794] As quite a beginner among bee-keepers I feel I would like to submit briefly my year's work among my bees, and to ask your comments on it. I may say my only instructors are that excellent work the "Guide Book" and the JOURNAL.

I really started in the spring of 1912, and finished with four stocks, one of which I lost early last spring, and replaced it by a lot I purchased. These four stocks gave six swarms and casts quite early, now making my number ten, all of which are on ten frames with plenty of stores, and crowded with bees.

My best stock did not swarm, and from this I have had 160½lbs. extracted honey: the other stocks and swarms produced altogether 89 1lb. sections and 164½lbs. of extracted honey, making a total of 414lbs.

Is the 160½lbs. from one hive anything like a record for Middlesex? I have now stored away forty brood frames and twenty-four shallow frames, all drawn out ready for a good start next spring. My first sections were taken on June 21st, and the first extracted honey on June 29th. All the honey is excellent in colour and flavour, principally from clover and lime.

I sowed in the autumn a fairly large patch of turnips, and allowed them to bloom, and this provided pollen quite early in the spring. I also purchased four skeps of bees early in May, two of which only swarmed, the others being too weak. So now my apiary consists of twelve hives and four skeps. I am having a photograph taken shortly, and if it at all interests you I should like to send you a copy. [We shall be pleased to have it. You have certainly had a most successful season.—Eds.]—W. F. F., Enfield.

A SCOTTISH BEE-KEEPER'S REPORT

[8795] Having been away from home during the month of July, I am not in a position to report on the weather conditions during that month, but I can give you the result of the honey-flow, which, on the whole, was disappointing. Bees around here built out combs very well during May and June, but in July, though we had delightful holiday weather, it was not suitable for honey production, clover and limes being practically a failure owing to the continued drought. However, I feel certain that bee-keepers will be rewarded when bees return from the heather. They were sent off on August 9th. I paid a visit to the moors on 20th ult., and found that all hives had done exceedingly well, having in some instances (where strong) all shallow frames capped, and this in hives with a double set of supers. The bees seemed slow to go into sections, but I feel confident that time and patience will persuade them to go up. Heather was not at its best, but now the very welcome rain will do much to assist honey secretion. A report has reached here that "Isle of Wight" disease had broken out, but I am pleased to say that all hives where our bees are situated are strong and healthy. I learn on good authority that about four miles away disease has made itself evident, two hives having been shut up, and necessary precautions taken: the owners come from our district. I am not satisfied from what I have been told that the bees have "Isle of Wight" disease, but dare not contradict, as the bee-keeper who examined and shut them up has "come through the mill," and should recognise even a doubtful case. I hear that the owner has not gone near them, but has left other members of the fraternity to disinfect or take necessary precautions to protect themselves. When on the subject of "bee disease," let me say that in this district and not far from my apiary disease broke out in two stocks; there were four hives in all. I was informed of this, and, being more than passing interested, never having seen bees so affected, I made a point of going to the place that very morning, and was astonished at the number of wasps flying around. On watching closely (thinking they were there with the fixed purpose of robbing) judge of my surprise when I discovered they were settling on the bees that had fallen to the ground and died. On examining these bees my friend and I found that the wasps had eaten the abdomen clean out in every case; in fact, had partaken of the very essence of this disease. Now, what more natural than these very wasps went direct to a healthy hive, perhaps none too strong, and by so doing carried the infection. I should feel obliged if others, having had the misfortune to have "I.O.W." disease in their apiary, noticed this. I may add that my friend lost no time in protecting himself and others by promptly destroying hives, bees, quilts, &c., in his furnace, he being a blacksmith. I observe in your issue of August 14th, a correspondent advocating "Lysol" as a cure. What he recommends has been done to the two remaining hives, and being a great believer and constant user of "Lysol," I will watch and report. I have made up my mind, if bees return healthy from the heather, to adopt his idea, and if it does no good I can assure readers that it cannot do any harm. W. C. B., Blantyre.

"ISLE OF WIGHT" DISEASE AND "CURES."

[8796] Many of your readers, who have read the recent letters relating to the apparent success of various disinfectants as cures for "Isle of Wight" disease, may be interested to know that several bee-keepers in this village have had the same results without the use of any "cure" or disinfectant whatever. In my own case, I am a novice at bee-keeping, my only two stocks succumbed to "Isle of Wight" disease early last autumn, but in the middle of May of this year I became the possessor of a stray swarm. This I hived in one of my old hives, which had previously been thoroughly scorched out with a painter's blow-lamp and supplied with new fittings and foundation. For a fortnight the bees appeared to be going on well, then they began falling about, and crawling up blades of grass, &c., in the usual way with "Isle of Wight" disease, and in about ten or twelve days they had dwindled down until there were only a few left on a couple of frames, certainly

not more than enough to fill a half pint measure. These I left as they were, and had no opportunity of looking at the hive again for some days. When I did so, I was surprised to find there were still survivors, and these were flying briskly in and out with no sign of a crawling bee anywhere. From that time they have continued to make fair progress, and have given me a rack of well-filled sections. A similar experience has befallen at least three of my neighbours, but it remains to be seen if the "cures" are permanent.—K. C. A. P., North Herts.

A RETROSPECT—FOREIGN BEES.

[8797] I am writing as an old beekeeper, having kept bees now for considerably over thirty years, and for many years I regularly took the BRITISH BEE JOURNAL, but for the last few years I have not seen it. I have, however, again become a subscriber, and notice with feelings of something like sadness what a change time has wrought; many names that used to regularly adorn its pages, alas, are seen no more. Very few can be found now that were familiar twenty-five years ago, but it is cheering to see that new names take the places of the old, and the JOURNAL still seems to be bright and interesting.

What has roused me to write to you is what I consider to be a calamity that is rapidly coming over this part of the country. We have had an outbreak of "Isle of Wight" disease, and it played havoc amongst our bees, but I am pleased to say I believe it has passed over, and they seem free from it, and strong again; but the *calamity* I am alluding to is not this disease, but the rapid increase of foreign bees in the country. I know not what their particular breed is—whether Cyprian, Carniolan, or Ligurian—I am inclined to think it is a mixture of all; they are very pretty bees with yellow striped backs, and—that is the only good point about them—good breeders? Yes, they are, and *good swarmers*. To say they are a nuisance is to put it very mildly, it seems to be an utter impossibility to keep a stock strong enough to store honey without its swarming over and over again; they swarm morning, noon, and night, and in any weather almost. Twenty years ago I tried Carniolans, and found them excellent breeders, but their swarming propensities at that time drove me nearly wild. I remember writing to the JOURNAL and giving my experience with them; I said at that time that they were just the very bees for the seller of *bees*, but useless for getting honey. My opinion is not altered. The nuisance is that so many swarms come off, that a large proportion fly away and thus spread all over the surrounding district. Several beekeepers around here have been considerably troubled with them this season, and have taken a lot of trouble to rid themselves of them by re-queening. I should like to hear what others in other districts have to say on this subject. We may have an especially bad strain hereabouts; I sincerely hope the whole country is not going to be overrun with them. I have no doubt the breeders and sellers of these bees will say the management is at fault; it may be, but I think when one has spent thirty years keeping bees on modern principles, and tried pretty nearly every method of swarm preventing, and kept English bees alongside the foreigners, it cannot be altogether bad management. At any rate, if it is so, then I am certain it requires more than an ordinary amount of intelligence to cope with them. I am afraid I am taking far too much space, but this seems such a serious trouble that is in our midst that I hope you will try and find room to insert my letter. I am writing entirely without prejudice, and solely for the good of the craft, having no "axe to grind" in any way.—H. N., Sussex.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Clipping of Queen's Wings (p. 298).—I have temporarily abandoned this practice in spite of its advantages. Like many other good things, it requires intelligent use! Loss of queen and resultant after-swarming is the disadvantage. I would use it again without hesitation, if I could give each hive a clear space in front, with a black currant bush immediately in front of and six feet from the entrance. "Black" currant because boughs may be cut out without detriment.

Plain Reading and High Thinking (p. 307).—Yes, "D. M. M.," I do! I quite agree that readers should think. But I would not therefore compel them to do so unnecessarily, if a few plain words would help some reader of limited advantages. For there are many of limited education in the ranks. I know that I like to understand at the first reading. Life is too short to mine for meanings. At the same time, one would rather some points were lost than explain unduly. Jokes, for instance! Fortunately, I am blameless here! But I quite agree that readers should think, and very little pressure would induce me also to include writers.

Preserves (p. 308).—Does this mean that fresh fruit may be preserved in honey without heating, or at least without sufficient heat to spoil the honey? The strawberry is about the last fruit to which one would expect this to apply, but

it is instanced. Recipes would, no doubt, interest Mrs. Beekeeper!

Brace Combs (p. 315).—I do not remember to have seen the point here raised by "D. M. M." previously mentioned, namely, that occasional colonies have this trick to a fault. But I can confirm it, and whenever it occurs I re-queen. The trick is most troublesome in the case of sections, for once done there is always the necessity of thorough cleaning of the separator. Ordinary scraping is insufficient, and boiling or greasing is necessary with wood. In the case of brood combs, it is troublesome, but less material. I make a practice now of cutting down the combs at the spring examination, removing all the bosses of honey. This gives a set of combs which can be closely spaced, or interchanged in the hive. At one time I simply mashed down the honey, and let the bees clean up, but this resulted in a crop of brace combs. Now I cut clean off, and allow the bees access over the quilt to the removed chunks, which are soon ready for the solar extractor. This process is the best form of stimulation, as the combs become cleared and ready for brood right up to the top bar.

Propagandist (p. 316).—I know that I am dull, and I have really done some thinking over this to oblige "D. M. M.," but I can't quite make out what Mr. Kidd means. Early in his letter he says, "Swarming is the best propagandist." I understand that, I think. But later he says, "Fancy a propagandist putting back a swarm." Now that makes it difficult. Swarms do sometimes re-hive themselves, but, Honest Injun, I don't know what he means, although I share his enthusiasm as to swarming and welcome him to the maligned ranks of the skep defenders. The fact is, swarming is still the natural mode of increase, whilst in the hands of even the most modern apiarist swarms can be utilised to advantage. For one thing, the resulting cells are the best obtainable, and entail a minimum of trouble to those who have difficulty with artificial methods.

The Stingless Bee (p. 324).—Is not Mr. Smallwood a trifle dogmatic in asserting that the stingless bee has not yet been "invented"? I have not been to California, so I cannot say how long the snakes may be, but I have read that Mexico rejoices in a stingless bee, which makes up for what it lacks elsewhere by biting furiously, very much as our militant Amazons will have to do when armaments are abolished and soldiers are no more. There is a reference to a bee of this habit in Nyasa (p. 348). For my part, I welcome the first sting of the year, very much as the first snowdrop, and the earliest hawthorn leaf, as a harbinger of summer. And although one can have too much of a good thing, I would at any time prefer the attentions of a bee to those of a midge, or some other human dependant. The millennium is, no doubt, worth looking for, if only that the mosquito and the flea may cease from troubling. In that day, when the thistle and the nettle no longer lay waste the land, whilst the vine with unbroken grape, and the fig tree harbouring not the active wasp, shade the doorway of the erstwhile bee-keeper, it may be presumed that we shall cease from our assaults upon the patient cow and the long-suffering bee, in a then superfluous endeavour to make the land flow with milk and honey. Then, however useful as a ploughshare, the sword will be in no demand as an uncapping knife.

SHEFFIELD AND DISTRICT B.K.A.

A meeting of the above Society was held at the Wentworth Café, Renstone Street, on August 21st. The first business done was to expel two members and to return their subscriptions. Affiliation with the South Yorkshire B.K.A. was discussed. It was decided to hold a show if possible at an early date, and the suggestion that the Chrysanthemum Society should be asked to allow the Association to have a stand at their show in November met with unanimous approval. The number of members is now thirty-nine.—W. B. Tallent, Hon. Sec.

Queries and Replies.

[8806] *Studying Bee-keeping.*—I am desirous of studying bee-keeping in all its aspects and stages, especially with regard to the various diseases of bees and brood. (1) Would you kindly inform me whether there are any classes held in or near London? (2) Could you arrange to let me know when Messrs. Cowan, Herrod, or other recognised authorities lecture in or near London, on any subject connected with apiculture or shall I find all notices of lectures in the "B. B. J."? (3) As I want to form a collection of examples of the transition of the bee from egg to perfect insect, also the combs, &c., I shall be obliged if you would kindly inform me of the best preservative to use? (4) I also want examples of diseased combs, would corrosive sublimate be suitable for preserving them with all their imperfections? (5) Would there be any danger in keeping them, or is it necessary to have them in hermetically sealed vessels? Please send me particulars of membership.—Axon.

Reply.—(1) Particulars of lectures and classes at the British Bee-keepers'

Association's Experimental and Educational Apiary, in the Zoological Gardens, Regent's Park, N.W., have been sent you. (2) You will find particulars of these in circular sent and also in "B.B.J.," and if you become a member of the B.B.K.A. notices of these will be sent to you. (3) A 10 per cent. solution of formaldehyde is best. Methylated spirit discolours. (4) and (5) These can be kept in the same solution as above, and should be put in hermetically sealed glass tanks which are sold for the purpose of preserving such specimens. Particulars of membership have been sent to you.

A NOTE ON THE ALLEGED POISONOUS PROPERTIES OF HONEY FROM *DATURA STRAMONIUM*.

By Harold Deane, B.Sc., F.I.C.

[A Paper read by Harold Deane, B.Sc., F.I.C., at the Jubilee Meeting of the British Pharmaceutical Conference; reprinted from the Pharmaceutical Journal.]

The interest of this subject lies rather in its exemplifying the devious paths by which statements get into books of reference, and the difficulty of stopping the spread of false information once it has got a start, than in its intrinsic importance. On p. 773 of the nineteenth edition of the "United States Dispensatory" occurs the statement that honey collected by bees from *Datura stramonium* is poisonous, and in Tschirch's "Handbuch der Pharmakognosie" (Band II., S. 10, 14) *datura* is included in a list of plants that afford poisonous honey. As at the time these paragraphs were noticed there was a considerable area of *Datura stramonium* in bloom on Messrs. Stafford Allen and Sons' drug farms at Long Melford, in close proximity to several beehives, the matter seemed worthy of attention.

Inquiry showed that stramonium had been grown near the hives in previous years, and that no complaints of the honey had arisen. On examining the plants no bees were found visiting the flowers, and the structure of the flowers showed that they were not adapted for bees. The flowers are white, they have a long corolla tube, with the nectaries at the bottom, and first open in the evening, when their scent is much stronger than during the day. It is thus evident that they are adapted for pollination by night-flying insects with long proboscides —the hawk moths. The tube of the corolla is almost closed by the style and the anthers, leaving just room for a proboscis, but not nearly enough to allow a bee to crawl down the tube. As the length of the proboscis of a hive bee is only 6 mm., and the length of the corolla tube of stramonium is from 55 to 65 mm., it is evident that it is quite impossible for bees to gather honey from the flowers. Certain species of bee have a habit of biting through the base of the corolla of some flowers to save themselves the trouble of pushing their heads past the stamens, but the hive bee does not do this, although it will use holes so made if it finds them. Moreover, the calyx of stramonium is inflated, and would render such biting through difficult, if not impossible, and all the cases recorded are of flowers which the bees know contain honey, because they have obtained it by visiting them in the usual way. Knuth's "Handbuch der Blutenbiologie," the authority on the subject, gives no cases of flowers from which the bees are unable to obtain honey in the usual way being bitten open. The same authority gives hawk moths and small beetles of the genus *Meligethes* as the only insect visitors to *Datura stramonium*, while with regard to *D. tatula*, which has a very similar flower, he says honey bees are unable to reach the honey, but when the flowers open late in the afternoon they take pollen from the mouth of the tube.

Having thus demonstrated to my own satisfaction that bees do not get poisonous or any other honey from *Datura stramonium*, it seemed desirable to get to the source of the error. Tschirch gave "Flückiger" as his authority; this is vague, and I was unable to trace it further. The "United States Dispensatory" gave H. Bley, *Pharmaceutische Zeitung* (1885, 30, Nov. 25). This volume is not in the Library of the Pharmaceutical Society, but I found in *The Pharmaceutical Journal* (1885 [3], 19, 448) the following:—

"At the last meeting of the Bee-keepers' Society in Dresden, Herr Bley, a pharmacist, brought forward the subject of poisonous honey, which, he said, had been several times imported from Trebizond. He attributed the noxious property to the growth of the *Datura stramonium* in the district from which the honey was derived, and said that cases of illness, in one case followed by death, had been officially established."

This did not indicate the source of Herr Bley's ideas, so the *Pharmaceutische Zeitung* was procured, but the paragraph in *The Pharmaceutical Journal* turned out to be practically a translation of that in the German periodical, except that Herr Bley had been promoted from a "Drogist" to a pharmacist. I, therefore, asked a relative then living in Germany if he would assist by searching in a public

library for a fuller report of Herr Bley's paper. He took the more direct course of writing to the President of the Dresden Bee-keepers' Association [Bienenzuchter-Verein für Dresden und Umgebung]. The latter searched the minutes of the Association, and found that on October 25th, 1885, Herr Bley had given, not an original paper, as one would imagine from the report in the *Pharmaceutische Zeitung*, but abstracts from various journals of matters of interest to bee-keepers. The following is a translation of the one we are now concerned with:—

"Poisonous Honey.—In No. 34 of the *Drogaen Zeitung*, of 1879, a report was made concerning poisonous honey, which the bees in the neighbourhood of Trebizond collect from the flowers of the Thorn Apple, which grows so freely there. The use of this honey is followed by fainting, vomiting, and delirium, and sometimes even by death." A search for the *Drogaen Zeitung* of that date was unsuccessful, but a further search in the literature brought me to what is evidently the original source.

In *The Pharmaceutical Journal* ([3], 18, 397-9) is a paper entitled "Notes on Trebizond Honey," read before an Evening Meeting of the Pharmaceutical Society, by J. C. Thresh. In the course of it he says: "Still more recently, Mr. A. Biliotti, H.M. Consul at Trebizond, in his Report for 1879 (c, 2,331, p. 1,023), says that 'bees are reared on a somewhat large scale in the province of Trebizond, but the honey produced is unfit for food.' He also adds: 'It is presumed that the poisonous principle contained in the honey is gathered from the flowers of the *Datura stramonium*, which grows in abundance on the coasts. Bee-hives, therefore, are only remunerative for their wax.'"

Dr. Thresh examined a sample of this honey, which Mr. Biliotti had sent to England, and showed that there was no alkaloid in it. Dr. Stockman corroborating by showing that none of the extracts obtained from it dilated the pupil. He thus came to the conclusion that Mr. Biliotti's idea of its origin from *Datura stramonium* was wrong, and supported the theory, which has since been fully confirmed, that *Azalea pontica* is the source of the poisonous honey from Trebizond. In the discussion on the paper, Mr. E. M. Holmes also pointed out that the flowers of *stramonium* are not adapted for the visits of bees.

In this connection, it may be noted that it does not necessarily follow that because other parts of the plant are poisonous, the nectar secreted by the flowers is so. Honey bees visit the flowers of *Atropa belladonna*, sometimes in large numbers, although they appear to prefer other flowers when they can find them, but no bad results from eating the honey from hives kept near the fields of belladonna at Long Melford have been reported.

Thus we see that a rash guess made by a British Consul, which was afterwards corrected, got into a German pharmaceutical periodical, from there to the Dresden Bee-keepers' Association, thence to another pharmaceutical journal, and thence to an American book of reference, and is still flourishing after more than thirty years.

THE "GIFT" EXTRACTOR.

Our correspondent, "G. H.," Guildford, who offered to give a "Little Wonder" extractor to any needy bee-keeper willing to pay carriage on it, received more applications than he bargained for. He therefore asks us to state that having chosen one from the nearly fifty applicants he hopes the others will excuse his not replying to their letters as he has not time to do so; also most of these were not accompanied by a stamp for reply. The extractor was sent to a country schoolmaster, who is endeavouring to initiate his older pupils into the mysteries of bee-keeping. They are all poor country lads, and cannot afford to spend money on appliances, so what they cannot make themselves they have to go without. Therefore, "G. H." considers that here his extractor would do the greatest good, and we hope the disappointed ones will agree with him, as we do.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

H. R. (Clapham).—*Starting Bee-keeping.*—(1) Any bee appliance dealer will supply you with a hive stocked with bees, or you could purchase a frame hive now, and a swarm in spring, which you could hive yourself, following instructions given in the "British Bee-keepers' Guide Book." (2) No, April or early May is the best time.

J. W. D. (Hersham).—*Surplus Queens.*—There is no way of keeping a young

surplus queen alive through the winter, except in a nucleus hive, and if you unite the two nuclei as you suggest you must sacrifice the queen.

Honey Samples.

A. F. K. (Truro).—No. 1 is a beautiful light clover honey, good enough for any show. No. 2 is exceedingly good in density, aroma, and flavour, the latter being particularly rich and mellow. It is, however, too light for the medium class, while not quite light enough to stand first chance in light honey class. It should realise a good price, as it is an excellent table honey.

C. J. G. (Walthamstow).—Your sample is a dark honey from mixed sources, lime predominating. It is well-ripened and of good flavour; we should call it a very palatable table honey.

K. E. H. (Salisbury).—A nice light honey, mainly from clover, quite good enough for exhibiting, but it is showing signs of granulation.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½*in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

SALE or EXCHANGE, Muller's autoharp, producing thirty-six chords, five books music, cost £3 6s. 6d., good as new.—FOSTER, Ashprington, Totnes, South Devon. v 85

EXCELLENT hardy strain British bees, stock on eight frames, with guaranteed 1913 queen, 30s.; new W.B.C. brood chamber, with ventilated floor and lid included, district untouched by "I.O.W." disease.—ALUN JONES, certified expert, Halkyn, Flintshire. v 75

WANTED, English honey, clover or lime, in bulk; quote price per cwt. on rail.—WOOD, Colewood, New-road, Mitcham. v 77

SIX DOZEN 1lb. screw top glass bottles extracted honey, 8s. 6d. dozen, in returnable crates; two dozen empty hives, in excellent condition, guaranteed free from disease, Lee's and Taylor's Colonial pattern, cheap.—MARRIOTT, Black Notley, Braintree, Essex. v 80

100 WALLFLOWER PLANTS, eighty Chapman's honey plants, good, strong plants; 100 cumfry sets; exchange rabbits or bantams.—LAWRENCE, Bee Farm, New Buckenham, Attleborough. v 81

FOR SALE, pure English honey, light colour, 60s. per cwt., free on rail; sample, 2d.—LAW, Cuckoo, Ashwell, Herts. v 82

100 LB. finest pale clover honey, 6½d. per lb., free on rail, cash with order; sample, 3d.—NYE, The Orchards, Sonning Common, Oxon. v 85

FOUR skeps bees, heavy in winter stores, young queens, 12s. each; several bar-frame colonies, frames all worked from full sheets foundation, all young queens packed with winter stores, 23s., or offer; several section racks, 8d. each; must sell, room wanted.—T. HARRIS, Chapel-street, Aberfeldy. v 83

TWO strong stocks, healthy, on ten frames, W.B.C. pattern hive, 1913 prolific queens, 25s. each.—ANDERSON, Church-place, Annan. v 79

FOR SALE, overstocked, four strong, guaranteed healthy stocks; particulars.—ROBINSON, The Lonning, Dalston, Carlisle. v 61

CAMERA, 5 by 4, Montauk, Busch lens and shutter, three double slides, tripod, leather case, &c., as new, cost £4 4s., accept 50s. Approval; Deposit.—JUDGE, Barrowdene, Shepherd's-lane, Dartford. v 76

"ISLE OF WIGHT DISEASE."—To owners of infected stocks, and those wishing to prevent infection, we invite applications for free circular describing an entirely new and extensively tested inexpensive cure and preventive of this scourge.—Write, ALFRED FRENCH, Richmond-road, Cambridge.

FEW dozen sections, good, for sale; what offers?—HILLS, Enford, Wilts. v 58

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

SUPERB COTSWOLD HONEY, 1lb. jars, 8s. 6d.; ½lb., 4s. 9d. dozen; sample, 2d.; wax or combs wanted; exchange, section cases.—BOWEN, Coronation, Cheltenham. v 87

HONEY JARS.—½lb., 10s. 6d.; 1lb., 12s. 6d. per gross, with screw caps and wads.—COANEY, Dale End, Birmingham.

CHELTENHAM CURE, tested "I.O.W." remedy, 1s. 6d.—BOWEN, Coronation, Cheltenham. v 88

HEALTHY DRIVEN BEES, 5s. per lot, boxes returnable, young queens.—A. MORETON, Hallow, Worcester. v 78

WANTED, pure fertilised British Golden queens, Sladen's preferred.—E. MANNERING, JUN., Crabble, River, near Dover. v 85

SECTIONS WANTED, glassed or unglassed, by HONIELADE CO., 23-25, Moorfields, London, E.C. v 60

NOW READY, healthy driven bees, with 1913 queen, 4s. per lot.—W. H. HIGLEY, expert, 49, Franchise-street, Kidderminster. v 69

STRONG NUCLEI, four frames, 10s. 6d.; five frames, 12s. 6d.—KITSON, Stansted, Essex.

1913.—PURE imported Golden Italian fertile queens, guaranteed healthy, vigorous, prolific, 4s.; specially selected, 7s. 6d. each, prompt despatch.—J. B. GOODARE, Woden Apiary, Wednesfield, Wolverhampton. v 93

NOW is the time to re-queen in order to produce young bees to strengthen stocks for winter.—Choice fertile tested English queens, 5s. each; excellent strain, safe arrival guaranteed; send for catalogue of up-to-date bee appliances. Winner of the first prize at Royal Shows, 1910, 1911, and 1912.—WILKES, Lichfield-road, Four Oaks, Birmingham.

SECTION GLAZING, extra fine quality, lace paper, neat pattern, white, 100 strips, 6d.; 300, 1s. 4d.; 500, 2s. 3d., post free; lace bands, 2⅛in., 3in. and 3⅛in. wide, 100, 1s. 2d.; 200, 2s. 3d.; 500, 4s., post free.—W. WOODLEY, Beedon, Newbury.

SECTIONS WANTED, any quantity, cash; also extracted.—F. W. WEITZEL, 21, Lonsdale-road, Kilburn, N.W.

BEAUTIFUL QUEENS, Sladen's, 5s. each.—OLIVER KNIGHT, Epney, Stonehouse, Glos. v 36

Editorial, Notices, &c.

WORCESTERSHIRE B.K.A.

The annual show of the above Association was held at Madresfield, Malvern, on August 7th, the committee of the Agricultural Show again kindly allotting the greater portion of a tent for the purpose. The number of entries were more than double those of last year, the quality of the honey in all classes was of a very high standard, and the 700 to 800 jars and sections staged formed as good a display as any in the history of the Association, and was much admired by the many visitors to the show.

A new class this year for a single 1lb. bottle drew eighteen entries, the first prize going to Devon and the second to Notts. The silver and bronze medals and certificate of the B.B.K.A. were awarded to Mr. H. E. Scrope Viner, Tewkesbury, Mr. W. J. Woolley, Evesham, and Mr. P. V. Leeke, Leigh, respectively.

The bee-tent was occupied by Mr. E. A. Millward, his demonstrations attracting large audiences, who asked many questions and showed a keen interest in bee-keeping. The President of the Association (Rev. Canon Coventry) and Dr. W. E. Moore Edq had no easy task in judging, but their awards in all classes appeared to quite satisfy the exhibitors. The following is a list of the awards:—

OPEN CLASSES.

Display of Bee Products.—Equal 1st, J. Toombs, Ledbury, and G. Richings, Worcester.

Single 1-*lb. Jar of Extracted Honey.*—1st, Miss E. S. Hole, North Tawton, Devon; 2nd, A. G. Pugh, Beeston, Notts.

Honey Cake.—1st, P. V. Leeke; 2nd, H. W. Taylor; 3rd, J. Toombs.

MEMBERS' CLASSES.

Twelve 1-*lb. Sections.*—1st, H. E. Scrope Viner; 2nd, W. J. Woolley, Evesham; 3rd, P. V. Leeke.

Six 1-*lb. Sections*—1st, G. F. Hooper, Pershore; 2nd, H. W. Taylor, Earls Croome; 3rd, Miss Holt, Broughton Hackett.

Twelve 1-*lb. Jars Extracted Honey.*—1st, Jos. Price, Old Hill, Staffs.; 2nd, P. V. Leeke; 3rd, H. W. Taylor.

Six Jars of Granulated Honey.—1st, Jos. Price; 2nd, A. R. Moreton, Hallow; 3rd, G. Cook, Bastonford.

Shallow Frame for Extracting.—1st, H. E. Scrope Viner; 2nd, T. Rouse, Rochford; 3rd, H. W. Taylor.

Beeswax (not less than 1-*lb.).*—1st, H. W. Taylor; 2nd, Mrs. John Walker, Knightwick; 3rd, Jos. Price.

Six 1-*lb. Jars Extracted Honey.*—1st, H. W. Taylor; 2nd, S. R. Wright, Woollaston; 3rd, H. H. Palmer, Redditch.—GEORGE RICHINGS, Show Secretary.

DERBYSHIRE B.K.A.

The annual show of the Derbyshire Bee-keepers' Association was held in conjunction with the Derbyshire Agricultural Society's Show at Derby on Wednesday and Thursday, August 27th and 28th. The weather on both days was glorious, and in consequence great numbers of people attended the show, greatly exceeding the attendance of the last few years. Mr. R. H. Coltman (secretary), with the aid of Mr. R. Giles (chairman), and Mr. J. Rowland (expert for the middle division of the county), had charge of the arrangements for the bee and honey department. The entries in some of the classes were not so numerous as might have been wished, notably the classes open to members only for six sections and twelve jars of dark honey. The section class has never been a good one, but this year, however, there were only two entries. However, to make up for the apathy of members, the open class for twelve jars was enough to satisfy the most exacting of critics. The awards were as follows:—

Observatory Hive.—1st, A. T. Salt, Mickleover; 2nd, S. Durose, Stapenhill; 3rd, C. Spencer, Ashleyhay.

Honey Trophy.—1st, S. Durose; 2nd, C. Spencer.

Six Sections.—1st, S. Durose; 2nd, C. Spencer.

Twelve Jars Light Honey.—1st, E. Varty, Diseworth; 2nd, J. T. Willson, Shirebrook; 3rd, T. Duckmanton, Langwith; r., S. Durose.

Twelve Jars Dark Honey.—1st, S. Durose; 2nd, C. Spencer.

Six Jars Extracted Honey (Novices).—1st, T. Duckmanton; 2nd, A. Eaton, Hatton; 3rd, D. Wilson, Belper.

Beeswax.—1st, C. Spencer; 2nd, D. Varty, Etwall; 3rd, E. Varty.

Six Jars Granulated Honey.—1st, T. Duckmanton; 2nd, A. T. Salt; 3rd, S. Durose.

OPEN CLASSES.

Twelve 1-*lb. Sections.*—1st, W. Patchett, Cabourne; 2nd, W. H. Pearson, Newport; 3rd, S. Lewis, Bridgend; v.h.c., S. Durose.

Twelve Jars Extracted Honey.—1st, S. Sanderson, West Wratting; 2nd, W. Patchett; 3rd, E. Varty; 4th, A. G. Pugh, Beeston; r., W. Halford, West Wratting.

Mr. S. Durose gained the Silver Challenge Cup for most points.—R. H. COLTMAN, Secretary.

A MODEL APIARY.

We are informed that the photographs of the above, one of which we reproduced in last week's "B.B.J.," were taken by Mr. R. V. Lawton, son of the Secretary of the Bridgnorth and District B.K.A.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By Geo. Hayes, Beeston, Notts.

FURZE, GORSE, OR WHIN (*Ulex europæus*).

No. 25. NAT. ORD. *Leguminosæ.*

No one who is at all familiar with our waste lands and commons can be ignorant of this plant. Its rich wealth of golden blossoms stretching over many acres, or bordering wide main roads and country lanes, the sweet fragrance of its flowers and the extent of its flowering season are all points which arrest the attention even of those who are indifferent to flowers. Early in the month of February we may find it here and there in blossom, "a token to the wintry earth that beauty liveth still," and as the spring advances the dark masses of foliage become laden with its brilliant blossoms. Persons seeing it attempt to pull its branches to regale themselves with the delicious perfume of its flowers, but they soon find its prickly stems are ample protection against such intrusion.

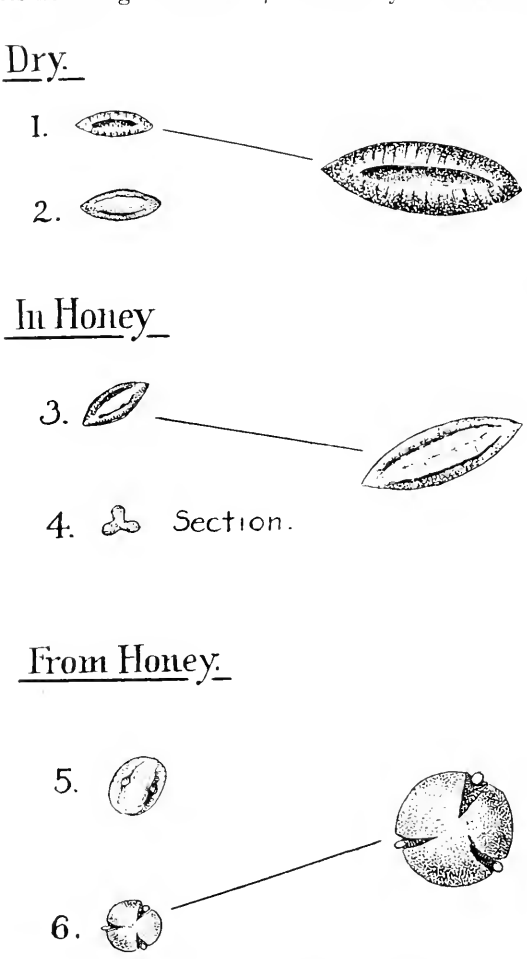
"For what more noble than the vernal Furze,
With golden baskets hung? Approach it not,
For every blossom has a troop of swords
Drawn to defend it."

Some say that Furze is sometimes spelt "Furres"; probably it is the bright yellow flowers which seem so "flame like" in their brilliancy that suggest this name of fire or furze bush. Its generic title—Ulex—implies that it is a plant of the wastes, and its specific name that it is indigenous to Europe.

The branches of this plant are spreading and grow very thickly. The spines are strengthened with many ridges. The calyx is shaggy, and the wings of its pea-blossom flower are longer than the keel.

As the spring passes into summer, and the countless blossoms which each brings fades away, the furze still holds its own, and justifies a very common saying, viz., "that when Furze is out of bloom, kissing is out of fashion," by which we are, of course, to understand, and I know to be a fact, that at all times a few blossoms may be found.

Formerly it was extensively used for fuel, more especially by country bakers in their ovens, and is still cultivated for the purpose of being cut down periodically. When burned the ashes are rich in alkali. They are sometimes used for washing, and also make a good manure for land; in fact gorse is sometimes burnt down to improve the land on which it grows, and to secure a crop of good young shoots, which are readily eaten by cattle. On the heath it forms a very pleasant contrast to the brown or purple heather, and also makes a picturesque and impervious hedge. In calm and sunny weather as its pods ripen, the crackling caused by the expulsion of the seed vessels is distinctly audible.



POLLEN OF GORSE, FURZE, OR WHIN.

It provides pollen and a little nectar for our bees when little else is about, at any rate in those localities where it is abundant. In some cases it takes the place of the sallow or salix, but the flower is forsaken when other supplies are available.

The colour of the pollen when viewed by reflected light is a brilliant yellow, but paler as seen by transmitted light. When packed in the corbicula of the bee, it is of a dull orange shade, which after gathering soon assumes a darker tint. Its form is lenticular, having three deep

grooves running nearly the whole of its length, the pellicle being striated. These are shown in Nos. 1 and 2. The size when dry is $\frac{1\frac{1}{2}}{1000}$ by $\frac{5}{1000}$. In honey it retains its original form, but increases in size to $\frac{1\frac{1}{2}}{1000}$ by $\frac{1}{100}$. This is shown at No. 3, while No. 4 is a section through the middle.

When taken from honey it has assumed an almost spherical form by contraction of the length. It is seen in the transition stage at No. 5; the grooves are deep and well defined in the last stage, having a process in each as seen in No. 6. In this state it measures $\frac{1\frac{1}{2}}{1000}$in. diameter.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

ROSS-SHIRE NOTES.

[8798] The season now closing has been a bountiful one for Highland bee-keepers. White clover was good, while heather displayed a remarkably luxuriant bloom, and bees worked splendidly on both crops alike. Even yet, some colonies are occupying two supers, while those contracted to a single rack of sections are decidedly overcrowded. A Carniolan colony has proved my best this season.

Needless to say, these bees were bent on swarming, so I was obliged to anticipate their wishes by artificial division.

The result is that I turned the one stock into six, and have taken a hundred finished sections, with four racks of heather honey still to be removed.

My Swiss bees have also given a three-figure surplus this season, while the new Banat variety gave a good account of themselves in their first summer here. Last, although not least, I must mention the White Star Italians, my one queen building up a small July nucleus to take full advantage of the heather flow, her colony now crowding two supers with sections sealed right out to the end glass.

Now that the crop is secured, the next step is its disposal to the best advantage. Good clover sections have been changing hands at tenpence, and that price should be maintained. But the real Highland heather honey commands a much higher figure.

In 1911 the lowest price I accepted was 1s. 2d. from a buyer who took over 100 sections, while other customers gave me from 1s. 3d. to 1s. 6d. per lb. Then came the wretched season of 1912, when heather honey could not be had, and customers were left unsupplied.

The inevitable "bad season" is a great drawback to bee-keepers, and something might be done in the way of holding over the surplus of one year to eke out the deficiency of the next.

Personally, I have never been able to put this idea in practice, as, however large the crop, it always sells before the next season arrives.

But, if carrying out the scheme in earnest, I should prefer to have the extra supply stored in extracting combs, and use these stored combs to hive swarms on in the following season. I have already done this on a small scale, and with success, but the subject is one that requires more than a brief reference.—J. M. Ellis, Ussie Valley.

DESTROYING CONDEMNED BEES.

[8799] Being a bee-keeper of the new school, and not understanding the way to suffocate bees properly, it was a great relief to me to read your article on the subject in "B.B.J." of August 14th (page 321). Several times when it has fallen to my lot to destroy stocks, I have found great difficulty in getting the sulphur to burn properly, with the result that unnecessary suffering has been caused. I must thank you for the clear explanation of the process, which I am sure will be of great service to a great number of modern bee-keepers.—G. James Flashman.

BLURTS FROM A SCRATCHY PEN.

DO BEES PAY?

[8800] Ye who are experienced in matters apicultural, please do not read this article. It is not written for the likes of you. To prove to you that bees pay would be akin to carrying coals to Newcastle, or demonstrating that the addition of two and two results in four. No, I just want to get at those who are in an uncertain mind, who would like to know if there is money in the business, and I am not going to array for these waverers a host of platitudes, reasons why bees should pay, &c. For their benefit I intend giving three instances of what has been done recently, even within the last season. This, I think, will be the most convincing logic, hard facts. Says Robert Burns:—

"Facts are stubborn chiels
That ding an winna be disputed,"

and I think this is one of the most common-sense couplets he has written. I could have got many more examples had I wished, simply by asking for them; there are many such, but I have selected these to prove my proposition, viz., that given

similar attention such as is given to the poultry run, or the flower garden, plus an intelligent and kindly interest in the ways and habits of the insects, ultimate success is certain. Of course, you will have your mishaps, but if you are wise you will gather wisdom, even from these. These mishaps will lead you to study why they have occurred (there is always a reason why), and then you will understand from observation the signals which must guide you.

Again, I have not gone to old and well established apiaries, I have selected two lady amateurs of recent experience, and a working gardener in an old-world village in Oxfordshire; but let them speak for themselves. Obviously I do not mention names to save them the trouble of being worried with letters.

The first lives well within the sound of "Bow Bells." Unlikely spot you would say for honey, but listen:—"Last year, 1912, I bought a swarm at the end of May, and in July I took off a good rack of sections. This year (1913) I have had from the same hive between 70lbs. and 80lbs. of extracted honey, and two racks of sections. Besides this, I doubled the brood-chamber, and about the beginning of June removed one with ten frames of bees, and started another hive. From hive No. 2 I have had four racks of sections. From a nucleus of four frames that I bought the first week in June, I took my best rack of sections, and have sold them for more than the nucleus cost me. Two swarms that I united on June 29th gave me a rack of sections I have sold to the amount of £3, but I have given away much more, and we consume a lot in the household."

Not at all a bad return for the second year of experience, but the second letter I have before me is even better, as the produce of one colony:—"I have bottled all my honey," the lady writes, "this morning, and find I have taken 222lbs. from my two hives. From the stock 138¼lbs., and from the swarm 83¾lbs." The swarm came from the stock it is necessary to explain, which stock therefore showed a profit for the year of one swarm producing 83¾lbs., and from itself 138¼lbs. of honey. And the "locale" of this harvest is a pretty Thames-side town, not twenty miles from London.

My third example, perhaps, I had better give in my correspondent's own wording:—

"Year 1911, I commenced with twelve stocks, increased to fourteen stocks, sold £25 worth of honey; expenses for the year, £5.

"1912. Commenced the season with fourteen stocks, increased to twenty-two stocks, sold honey value £30, sold stocks to value of £10; expenses for the season, £12, which leaves a profit of £28. Stocks left, twelve, with which I commenced 1913. I have increased these to twenty-eight, but not having completed my honey sales (August 15th) I cannot give you return as yet."

It is recorded of a French Bishop that in making his visitations he found one of the curés who, amid the general poverty, seemed more prosperous, and on enquiring of him the source of his wealth, the curé took his lordship into a well-stocked apiary, and, pointing to the flying thousands, said: "There are the labourers who work for me." And the Bishop ever afterwards gave the advice to those of his priests who pleaded poverty: "Keep bees, keep bees." There is a moral to every tale—go and do likewise.—J. Smallwood.

FOREIGN BEES v. NATIVES.

[8801] I should like to endorse "H. N.'s" remarks in "B.B.J." (page 356) on the characteristics of the foreign bee. For some years past I have kept different strains of Italians, pure and hybrid, side by side with the English bee, and I have come to the conclusion that, from a honey point of view, a *good* strain of the native bee is far superior to any foreigner. Under exactly equal conditions I have found that the Italians are much more inclined to swarm. Their queens are certainly most prolific, and, where increase is desired, ideal, but the ultimate aim of every bee-keeper is full supers of honey, and many of them, so a prolific queen that produces a swarming strain of workers is no advantage. Italians and their hybrids have another drawback—that is, they are inveterate robbers; at least, that is my experience of them.

Many bee-keepers of my acquaintance have, for the sake of novelty, or perhaps with visions of larger takes of honey, introduced foreign queens into their apiaries, and after two or three years of experimenting the majority are only too glad to go back again to the native bee. Unfortunately, it is easier to introduce the foreigner than it is to get rid of her.

Regarding disease, I have not found one race more susceptible than another.—L. B. W., Somerset.

THE SKEP AND COTTAGER BEE-KEEPERS.

[8802] "*Not sceptical, but skepless.*"—I am quite sure Mr. Crawshaw (page 338) does not mean to even compare the skep with the frame-hive, as this is practically impossible, except as a shelter for our little friends; but from a bee-keeper of Mr. Crawshaw's standing I think it harmful at this juncture in bee-keeping to advocate the skep, even for the cottager, on the plea of economy, or for simplicity in working. As an instance, I will again quote my own personal experience. I started

bee-keeping as a lad with a May swarm hived in a skep. I very shortly had to purchase another, and also resort to a box and a lard bucket to accommodate other increases of stock. I knew nothing about feeding, or having the bees strong enough to winter, &c., and thought I was getting along famously, as the average beginner or cottager does. Needless to say, I had to make a fresh start altogether the following spring. I lost my bees through ignorance, not disease. I next arranged to make a hive for a friend, a cottager, anxious to try this wonderful new method of keeping bees. Purchasing the "Guide Book," I managed to make his hive standard size and double walled. My own, which I made first by guessing at the sizes of frames, &c., was the cause of many a sting, especially during my first year, as I did not know about using the smoker. However, before the season was far advanced I made another brood-chamber, and soon had a very strong colony on twenty frames, and a section rack quite full of beautiful honey. I took this off without smoke or any other aid but a veil, and generally with my coat off, as I used to find the bees very partial to coat sleeves. At the same time I remember a neighbouring cottager had two skeps; at the end of the season he had fourteen. All these had to be bought, and I know he took no honey whatever and lost the lot through starvation, so I fail to see where the economy comes in. I know this is an extreme case, but it is true, and condemns the skep for simplicity, as the novice with the frame-hive soon searches for information, and at least gets a fair return, as the hive is large enough to keep the bees at home generally. One year my own skep must have contained a fertile worker, as the bees refused to accept either a caged virgin or a queen cell, so I have done away with it, as the bees had practically died out. The original tenants of this skep, however, are still progressing in their frame-hive, and I have reared a nice young queen from them, which I am hoping will prove immune from "Isle of Wight" disease—that is, if the latter is not on the wane already. I will admit the use of the skep as a hiving receptacle. What bee-keeper does not gloat over a skep brimming over with a nice swarm? I know I did over my one wee one this year.—A. H. Hamshar.

AN EARLY WINTER?

[8803] I was surprised on returning home on the last day of August to find that my bees had gone to bed apparently for the winter. They had glued up every hole and cranny, and scarcely came out of doors at all. As some stocks were neither strong nor wealthy I woke them up by putting on slow feeders, whereupon they began to gather pollen, and have evidently come to the conclusion that summer is not altogether a thing of the past. I found that quite a lot of breeding was going on in one of these very quiet hives, but most of the brood was sealed. Moreover, the guards are quite alert just within the doorway, and the wasps are kept out. Less fortunate is an apiary I take an interest in a few miles away. Here the wasps have come in their thousands, and have entirely wiped out one strong stock, consuming fully 40lbs. of honey. Another lot is fiercely threatened, and I am afraid I am too late to save it, but a little skep that has been swarming all the summer keeps the invaders at bay.—G. G. Desmond, Sheepscombe, Gloucestershire.

DEALING WITH "ISLE OF WIGHT" DISEASE.

[8804] I am much obliged for your prompt reply regarding the "I.O.W." disease contracted by three of my stocks. It may interest your readers to know that I think I have them all on the road to recovery. The means I took to cure it are simple and cheap, and I believe effective. I took a spare hive, cut a hole in the floor board 5in. square, and covered this with perforated zinc, thoroughly washed the sides and floor board with Lysol, using a large spoonful to a pail of hot water. I placed under the hole in the floor board a tin full of diluted Lysol, and then moved the frames into the new hive, and sprayed them on the top with quinine preparation. I put on a feeder of the same and covered them up. I then swept up the thousands of bees about the hives, sprayed all round the hives with the Lysol water, allowing a small quantity to go into the entrance. I have sprayed night and morning since, and each day fewer bees have had to be swept up. To-day the survivors are all working, and I have not seen more than a dozen dead bees outside the three hives. I am convinced the stocks will all recover. I also sprayed the boards and entrances of all my other hives to keep them healthy, if possible. I must thank the correspondent in the Journal of August 14th. for the "Hint" on the use of Lysol.—J. H. Meyer, Fulham.

[8805] I was much interested in the letter from your correspondent, "G. H., Guildford," in the "B.B.J." of August 28th (8791). I am quite an enthusiastic bee-keeper, this being my fourth year with bees. Last year "Isle of Wight" disease visited my apiary, and I lost the whole of my seven stocks. I was

deeply disappointed, as it meant a loss to me of quite £10. I was determined to try again, though I knew it was a great risk. I bought one stock, and later a May swarm. During the honey-flow the dread enemy visited me again. I saw Bowen's cure advertised; I at once wrote for a bottle, and followed the instructions, although the bees were supered. I sprayed them every other evening with the cure for a week, killing all the crawlers, then I waited and watched; then the other stock became affected, and I followed the same course with them, liming the ground all around and spraying it with carbolic in the evening until both stocks were cured. I had thirty-one sections from one and 13lbs. of extracted honey from the worst affected stock, and two swarms, which is the most strange thing of all. I am now feeding them with syrup, and I believe they will be strong enough to winter.—C. FOWLER, Bracknell.

[8806] I should like to give my experience of "Isle of Wight" disease, which is similar to that of "G. H., Guildford." I also have had some years with bees, and was very successful till last autumn, when I lost the whole of my eight stocks. Everyone advised me not to start again till the disease disappeared. I could not do without bees, so I obtained a small stock in a skep without a particle of food in spring. I drove them out, and hived them into a frame hive, sent for a sample of Bowen's cure, and fed as per instructions, and now I have three stocks, but I have taken only a small quantity of surplus. Just round here there is very little for the bees to gather in dry seasons like the present. I find one of my stocks is showing slight signs of "Isle of Wight" disease again, so I am sending for another supply of the remedy. I consider it is the best that can be used for this disease. I have taken your paper for some months now, and find it very useful. I am only a working man, and have very little time to myself, and possess only a very small garden, but I cannot do without my bees. —E., Bracknell.

A NEW USE FOR THE CLAUSTRAL HIVE.

[8807] An old countryman, about eighty, came to see my bees, and, noticing a Claustral hive, he said: "Well I'm dummed, I've seed beehives med o' straw and I've seed 'em med o' wood from the pigstye, but dash me I never clapt eyes on 'em with chimneys to 'afore. What be 'em for?"

I replied, "Oh, Tom, you know we have to smoke the bees, well those two chimneys are to let the smoke out."—A. H. WILKES, 4 Oaks.

Queries and Replies.

[8807] *Feeders and Feeding.*—Can you tell me:—(1) What is the principle of, and how does the rapid feeder work, which is illustrated on page 113 of the "B.B.K. Guide Book"? What is it made of? (2) In making naphthol beta solution, is the methylated spirit required the ordinary commercial (mineralised) kind, or must it be the pure spirit; if the latter, where can I purchase same? (3) I have the offer of a quantity of run honey, which was tainted through using far too much smoke when driving the bees out of a box. Is it safe to use this for feeding purposes?—H. P. S., Hants.

REPLY.—(1) The principle of this feeder is to allow the bees to take syrup as quickly as possible, so that they may store and seal it for winter food. It is made of wood with a tin lining. The large space nearest to you (see illustration in "Guide Book") shows where the syrup can be poured in by sliding back the glass. On the other side the bees are admitted through a hole on the underside, and can pass over between the wooden side and the glass, the cross lines show the wooden divisions, upon which the bees rest when taking up the syrup, so that they are not drowned. The wooden partition where the syrup is poured in comes flush to the glass, so that the bees cannot escape. The syrup enters through a slot underneath this partition. (2) You can use the ordinary methylated spirit, but spirits of wine is better. You can get it at any chemist's. (3) If you are certain that the bees from which it came were healthy, the honey will be all right for food.

[8808] *Bee-houses.*—I shall be glad of your opinion on the following:—(1) Have covered apiaries any advantages, and if so why are there so few built? (2) Are the enclosed rough plans likely to be of any help in building such a house? I might say that I've already nearly sufficient wood for the purpose by me. (3) Ought the house to face north and south, or east and west? (4) The one I thought of building would be 24ft. by 6ft. Would this hold twenty-four stocks? (5) Ought it to be lined inside? I find the cost of wood and iron to make the above would be about £4 10s.; twenty-four hives would cost about £10 16s., and I am rather short of ground.—G. N. H., Warminster.

REPLY.—(1) Bee-houses are uncomfortable to work in, and the numerous disadvantages they possess is the reason why they are so little used in this country. (2) Your plan is all right for such a house. (3) The ideal position for hives to face is south-east, and here you come upon one of the drawbacks to a bee-house. You cannot

put both sides of the house in this position, so some of the stocks must face the opposite way. (4) Yes. (5) Yes, but no iron should be used in building as it will make it too hot for the bees in summer.

[8809] *Ripening Unsealed Honey.*—I have two stocks of bees which still have shallow frames on, about half full of honey, a little of which is sealed over, the remainder I see they will not be able to seal over before I want to feed them up for winter. Kindly inform me how I can render the unsealed honey fit for table consumption, as I should like to do so, if possible, as we have had very little surplus this (our first) season.—NOVICE, Wales.

REPLY.—After the unsealed honey is extracted, it should be placed in a vessel with a wide mouth covered with muslin and allowed to stand in a warm room for, say, a fortnight, when the excessive moisture will have evaporated, and the honey can be put into jars for table use.

[8810] *Transferring from Skep to Frame-hive.*—I have a "W.B.C." hive, and obtained, a few days ago, a stock in a straw skep. The latter was a very early swarm, and had produced 10lbs. of super honey this season. The skep seems fairly heavy. I have placed a quilt on the frames in the "W.B.C." hive with an 8in. hole cut in it and the skep over this. Will this be all right for wintering? The hive, of course, encloses the skep. I suppose in the spring the queen will ultimately work down into the frame-hive, and I will be able to put an excluder on and leave the skep to be filled with honey. The bees do not appear to be working since put on the frames, although one or two days have been warm and sunny, they just keep flying in circles. I was not able to see the queen when placing the skep in position, but the bees only had a $1\frac{3}{4}$ mile drive, and received no bumping. Any hints will be of great service.—R. L. CHAMBERS.

REPLY.—Remove the brood-chamber of the frame-hive and stand the skep on the floor-board until next April, when it can be placed as you now have it for the bees to work down.

[8811] *Putting Stocks into Bee-House.*—Will you please answer me the following through the "B.B.J.":—(1) Having got too many hives to stand about the garden, I have converted a disused chicken house into a bee-house to hold seven stocks. In it I shall use brood boxes only (no outer case required). How and when am I to transfer? I am now rapid-feeding with syrup. (2) Would you advise an examination of all stocks now to see if they have a laying queen?—W. I., Grimsby.

REPLY.—(1) This should be done at the end of October. (2) Yes, as soon as possible.

[8812] *Pollen-clogged Combs.*—I have removed some frames and fed them back to the bees in order to have a set drawn-out ready for next year. Some of them, however, are very full of uncapped pollen. Shall I keep them as they are, or will they get mouldy? There seems a doubt in several of your correspondents' minds as to the amount of sulphuric acid required to dissolve quinine. One minim of the medical (diluted) acid dissolves one grain of quinine; the pure acid is twelve times as strong. No one seems to have noticed that quinine sulphate is soluble by itself in 800 parts of water, one gallon dissolving $1\frac{1}{2}$ drachms.—M. B., Hants.

REPLY.—You can get the pollen out by first soaking the combs in water, and then washing the cells clean by means of a garden syringe or hose pipe. If allowed to remain, the pollen will become mouldy and hard.

[8813] *Starting Bee-keeping.*—May I beg of you to be good enough to answer the following questions: (1) Can a novice make bee-keeping pay in the first year? (2) What number of hives will bring a net average return of £30 per annum? (3) Would north-east Warwickshire or central Leicestershire be good districts to start in? (4) What is the name of a reliable book on bee-keeping suitable for the novice who wishes to take up the subject with commercial ends in view? A reply in your columns will very greatly oblige.—H. E. B.

REPLY.—(1) We do not quite understand your meaning. If you want to clear expenses the first year, it is just possible, but not probable. You must sow before you reap. (2) Position, season, and capability of the bee-keeper have to be taken into account. The average profit is 20s. per hive, given the best of the above conditions. (3) Both are good districts, but not equal to Norfolk. (4) The "British Bee-keepers' Guide Book," by T. W. Cowan, from this office, post free 1s. $8\frac{1}{2}$d.

[8814] *"Isle of Wight" Disease.*—Early in April I forwarded you some bees for inspection, which you reported were affected with "I.O.W." disease. As they were from a very strong colony, with a young queen, I decided not to destroy them, but took away all stores and fed them with pure cane syrup (not medicated). The stock certainly improved, as in a few weeks no dead bees were found. In June they seemed in splendid condition, so I made an artificial swarm. In the middle of July a natural swarm issued, which I hived. I also made a nucleus from the artificial swarm. Now all four are good strong colonies, with young laying queens in each. I have taken 48lbs. surplus from the parent hive and 20lbs. from swarms. What I wish to know

is: Do you think I shall be troubled with "I.O.W." disease in the winter, or that the chances are that my bees are now free from disease? At the present time there certainly is no trace of any disease about them.—T. W. P., Falkirk.

REPLY.—We wish we could answer your query in the negative, but we are afraid it will make its appearance again. However, we hope our prophecy may not come true. Keep the bees and appliances clean, especially the drinking places, and it may not recur.

[8815] *Beginner's Queries.*—I have two stocks of bees—one native blacks and the other hybrids. I want to take a frame of brood from the hybrids to strengthen the other stock. (1) Is there any objection to mixing the two stocks in this way? I had a swarm this June with a last year's queen. (2) Is it advisable to requeen now, or should I wait till next season? They have plenty of stores, and seem moderately strong in numbers. About seven miles from here there are from 50 to 100 acres of heather. (3) Can you give me a rough idea of how many pounds a strong colony would gather from such a source? That would help me to form an opinion as to whether it would pay to take my bees there next year.—W. E. B., Bucks.

REPLY.—(1) There is no objection whatever. (2) Requeen now. (3) The heather harvest is so uncertain that it is impossible to even guess what a stock might do. The only way to ascertain this is to take a stock to the heather.

[8816] *No-Bee-way Sections.*—I notice in a bee-appliance maker's catalogue a "new no-way" 1lb. section worked with "fence" separators and measuring $4\frac{1}{4}$in. by 5in. by $1\frac{3}{8}$in. I understand this method of working and this particular size of section has some vogue in the United States. I would be glad to have your opinion on it as compared with our square section worked with two and four bee-way separators. I would like, also, the verdict of any of your readers who have tried both systems. I am restarting bee-keeping, and am thinking of adopting the new size.—J. B. B., Barrow.

REPLY.—The no-bee-way section is not at all new. It was introduced some years ago, but failed to become popular in this country.

[8817] *Queen Taking Flight when Manipulating.*—I bought a Carniolan queen and caged her for twenty-eight hours, having first destroyed ten queen cells. On releasing her she appeared to have been accepted by the bees, but on taking the frame out again, the queen took flight and disappeared. On closing up the hive I noticed the bees at the entrance were fighting. Can you give me a reason for the queen's flight and the fighting amongst the bees? I am only a this year's novice, but so far have had a good bit of experience in the twelve months. I find the answers to queries, both in the BEE JOURNAL and the RECORD, very helpful.—QUEENLESS.

REPLY.—Queens will fly occasionally. When this happens, it is best to stand quite still and keep the hive open for a little while, when the queen generally returns. We cannot account for the bees fighting. Are you quite sure they were doing so, or was it only excitement caused by the queen returning? Examine again, and you will probably find she is all right.

[8818] *Using Old Foundation.*—Two years ago I bought a number of brood frames fitted with full sheets of foundation; I have not needed many of them. If I keep the remainder until next season will the wax still be fit for the bees' use, or does it deteriorate? Your answer in the JOURNAL will much oblige.—X. Y., Glamorgan.

REPLY.—So long as they are stored in a moth-proof box the frames of foundation will be quite fit to use next year. Before doing so, warm the foundation before the fire to soften it and give it an aroma. If this is done the bees will work on it much more readily than if given to them just as it is.

Bee Shows to Come.

September 13th, at Conway, North Wales.—Annual Honey Show in connection with the Conway Honey Fair. The Conway Honey Fair has been annually held for centuries. Great opportunity for visiting one of the most historical districts of Wales.

September 18th, at Castle Douglas.—Annual Show of South of Scotland Bee-Keepers' Association, will be held in connection with the Dairy Show, Castle Douglas. **Entries closed.**

September 20th to 27th, at Royal Agricultural Hall, London.—Twenty-first Annual Exhibition of the Grocery and Allied Trades Honey Section under direction of the British Bee-keepers' Association. All open classes. Special prizes (see advertisement). Schedules from H. S. Rogers, Secretary, Palmerston House, Old Broad Street, London, E.C.

September 24th, at Altrincham.—Honey Show, under management of Cheshire Bee-keepers' Association, in connection with Altrincham Agricultural Society's Show. **Entries closed.**

Sept. 24th and 25th, at Kendal.—The Annual Show of Honey, Wax, and Appliances of the Cumberland and Westmorland B.K.A., in connection with the Northern Counties Fruit Congress, in the Market Hall, Kendal. Eleven open classes. Liberal prizes. Note.—All prize-money will be paid on second day of show. Schedules from G. W. Avery, Wetheral, Carlisle, or Geo. Chatham, Low Green, Staveley, Kendal.

September 25th, at Horniman Hall, North End, Croydon.—Exclusive show of Honey, Wax, Hives, Bees, &c. Increased prizes. Six open classes. Entry fees 1s. each class. Judge, W. Herrod, F.E.S. Schedules from A. Wakerell, 83, St. John's-road, Redhill.

September 27th, at County Technical Buildings, Stafford. Under the management of Staffordshire Bee-keepers' Association. Exhibition of Honey, Bees, Beeswax and Cakes. Open to members of Staffs. B.K. Association only. Classes for Cottagers and Novices. Schedules from C. R. Forse, Trentham, Stoke-on-Trent.

Notices to Correspondents.

G. R. S. (Monmouth).—*Honey Plant: Non-secretion of Nectar in Heather.*—(1) The flower you enclosed secretes a small quantity of nectar. (2) Want of rain has stopped the honey flow, but, rain having fallen, it only requires warm weather to make the bees work. Leave the hives at the heather; they may still give you some surplus.

J. C. (Ashford).—*Broodless Stock.*—The queen had not been fertilised; this caused the conditions you describe.

D. M.—*Buying Queens.*—We do all in our power to ensure that only reliable persons advertise in our columns—indeed, we refuse advertisements if we are uncertain as to the *bona fides* of the advertiser—but we cannot give a guarantee for those not personally known to us. If you send us the name of the queen breeder we shall be pleased to advise you privately. You have not complied with our rule of sending full name and address.

E. S. F. (Ipswich).—*Disinfecting Extractor.*—Wash it well with a ten per cent. solution of formaldehyde.

H. G. B. (Huddersfield).—*Introducing Queen.*—The queen must be caged with food as instructed, and about half a dozen workers from her own stock.

J. A. (Thankerton).—*Testing Foundation for Purity of Wax.*—(1) We regret the reply to your query would take up too much space just now, as our correspondence column is so overcrowded. However, you will find a description of the way to test for adulteration in "B.B.J." of March 9th, 1905. If foundation is adulterated, it usually falls with the heat of the hive. (2) Any appliance manufacturer will supply thin glass squares for glazing sections. They cost about 1s. 11d. per hundred.

A. W. (Perthshire).—*Buying Queen Bee.*—Knowing the dealer from whom you purchased the queen, we are certain that he would send you what you ordered. The markings in Italian bees very often vary considerably.

Je veux savoir (Middlesex).—*Honey Plants—Banat Bees.*—(1) The plant you enclose a specimen of is the willow herb. (2) Ragwort (*S. Jacobæa*) is a tall perennial herb, with golden yellow heads in a dense corymb, only too common by the roadsides and in poor pastures, &c. The leaves are pinnatifid, the heads being sometimes 1in. in diameter. (3) Banat bees are named from a district in Hungary, from which they were imported. They are similar to Carniolans in appearance. (4) The funds will not allow of an autumn tour by the expert, but in cases of urgent necessity he will call if his services are asked for.

Novice (Tyne Dock). *Unfertilised Queen.*—(1) The young queen should certainly have been mated long ago. We are afraid that she has been lost when returning to the hive. If hives are kept too close together this is very likely to happen. (2) The usual distance for foraging is under two miles, therefore the heather is too far away to be of use to you.

W. L. (Anglesea).—*Introducing Queen.*—It is not necessary to sprinkle the bees with syrup when introducing a queen. You must cage the queen for at least twenty-four hours, that is all.

J. C. (Kent).—*Dead Queen.*—The queen is a very old one, and from her appearance we should say she has been "balled." Every bit of hair is stripped from the body.

P. N. (Millom).—*Race of Bees.*—The bees are pure Italians.

H. J. (Cheshire).—*Heather Bloom.*—The specimen you send is ling (*Erica vulgaris*), and is the right kind of heather for bees.

W. E. (Harborne).—*Bee-keepers' Association.*—The Warwickshire is your County Bee-keepers' Association, the secretary being Mr. J. Noble-Bower, Knowle. If there is a local secretary at Birmingham he will give you particulars.

Pharmacist (Aberdeen).—*Races of Bees.*—The bees in the small box are ordinary British; those in the larger one have Italian blood in them.

Honey Samples.

W. J. Warks.—The sample is a dark honey of good flavour and density. Worth 50s. per cwt. in bulk, or 8d. to 9d. per lb. retail.

E. T. (Bootle).—Your sample is light in colour, thin, has practically no aroma, and is devoid of flavour except sweetness.

A. D. (Perths).—The sample is a very good light-coloured honey. It is worth 9s. 6d. to 10s. per dozen in gross lots.

A. A. C. (Bucks).—A nice light-coloured honey of good flavour and aroma, but density is only fairly good.

H. H. B. (Devon).—Both samples are from clover and quite good enough to show.

W. A. (Shrewsbury).—The honey is very good indeed from white clover. You are getting a fair price for it. (2) Buy "Snelgrove's Method of Re-queening," price 6½d., from this office. (3) Particulars of B.B.K.A. have been sent to you.

W. T. (Umberleigh).—The honey is a very good sample from clover and a little heather. It is fit to show in a heather-blend class.

F. T. (Porthpean).—A light coloured honey, excellent in every point.

Novice (Hinckley).—Samples of honey are good. We should choose No. 1 for exhibition purposes.

Still Learning (Lydbrook).—The reply to your inquiries is as follows: (a) Lime, (b) fair, (c) good, (d) 50s. to 56s. per cwt., or 8s. 6d. to 9s. 6d. in jars.

D. W. (Belper).—The honey is a heather blend, very good in flavour, but the density might be better. It ought to sell at least at 1s. per lb. retail.

K. E. H. (Salisbury).—The honey is quite suitable for showing, but it must be entered in light, not in the medium class.

J. B. (Bucks).—Honey is good enough to show in a light honey class.

E. L. P. (Hants).—We do not consider the honey dark: it is quite a good colour, and has a very nice flavour.

Suspected Disease.

W. V. (Bewdley).—The bees have died from "Isle of Wight" disease.

J. C. (Swansea).—It is foul brood; use "Apicure" in the hive.

C. E. A. (Dunton Green).—Bees show "Isle of Wight" disease. The only safe course to take is to destroy the affected stock, and keep careful observation of the condition of those now apparently healthy.

F. H. (Bath). Blossom, and F. R. (Barnsley).—Bees have "Isle of Wight" disease.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

WANTED, FIRST GRADE SECTIONS, and light Honey in bulk, prompt cash.—COOK, Torwood, Ashford, Middlesex.

HIVES for twenty frames, 9s.; two hives, ten frames, 7s. each, standard makes, excellent condition.—LISSERFERNS, Codicote, Welwyn. v 92

WANTED an emasculated black Persian kitten.—Box 4, "B.B.J." Office, 23, Bedford-street, Strand London, W.C. v 88

1 CWT. rather dark honey, 50s.; sample, 2d.—F. CRICK, Firwood Cottage, Halstead, Essex. v 95

BEST quality sections extracted honey for sale; offers wanted.—Apply, GARFITT, Llanerfyl, Welshpool. v 94

REMOVAL; one excellent stock, guaranteed healthy, ten frames, nearly all new, queen 1913, 20/-; 120lb. honey off this lot.—J. C., Old Lands, Whaddon, Bletchley. v 91

SALMON FAVEROLLES, eight cockerels, March hatched, price 5s. each.—H. EVANS, Scampston Hall, Rillington, York. v 90

EXCHANGE Blue Andalusians and Black Leghorn 1912 hens, for stocks of bees.—BECK, Airton, Leeds. v 89

HONEY.—Ten 1lb. screw top glass bottles extracted honey, this season's, guaranteed pure, 7s., on rail.—J. PEARCE, Earlswood, Rectory-road, Little Thurrock, Grays, Essex. v 90

1913 SELECTED QUEENS, bred from proved "Isle of Wight" immune parent, two now available, 4s. each.—ATKINSON, Thorpland-road, Fakenham. v 93

LIGHT EXTRACTED, 58s. per cwt.; sample, 2d., f.o.r.; or exchange for camera.—SIMCOX, 17, Victoria-road, Fallings Park, Wolverhampton. v 93

SUPERB COTSWOLD HONEY, 1lb. jars, 8s. 6d. dozen; Limnanthes plants, 100 1s.; observatory hive, 2s. 3d.—BOWEN, Coronation, Cheltenham.

WANTED, a good secondhand extractor, cheap.—W. MOODY, Taylor Wood, Wragby, Wakefield. v 100

TWO strong skeps bees, young queens, plenty of stores, 12s. 6d. each.—C. KIDBY, Hospital, Leiston, Suffolk. v 99

WANTED, bees, honey; exchange hornless English nanny, value 25s.—31, Harrow Manorway, Abbeywood. v 98

120 LB. good medium colour honey, in four tins, £3 3s., on rail.—WEAVING, Chipping Norton, Oxon. v 97

FINE SUFFOLK HONEY, screw cap jars, 8s. 6d., light golden colour.—WRIGHT, Bee-keeper, Sudbury. v 94

SIX DOZEN 1lb. screw top glass bottles extracted honey, 8s. 6d. dozen, in returnable crates; two dozen empty hives, in excellent condition, guaranteed free from disease, Lee's and Taylor's Colonial pattern, cheap.—MARRIOTT, Black Notley, Braintree, Essex. v 80

100 LB. finest pale clover honey, 6½d. per lb., free on rail, cash with order; sample, 3d.—NYE, The Orchards, Sonning Common, Oxon. v 85

FOR SALE, overstocked, four strong, guaranteed healthy stocks; particulars.—ROBINSON, The Lonning, Dalston, Carlisle. v 61

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

1913 PURE FERTILIZED QUEENS.—Swiss, 5s.; Carniolans, 3s. 6d.; Italians, 3s. 6d.; safe arrival guaranteed, cash with order.—FREDERICK VOGT, 63, Beresford-road, Canonbury, London, N.

FERTILIZED 1913 HYBRID QUEENS, 2s. 9d. each; two for 5s.—FREDERICK VOGT, 63, Beresford-road, Canonbury, London, N.

WANTED, healthy driven bees, with queen.—DENNETT, Whitchurch, Hants. v 92

HEALTHY DRIVEN BEES, 6s. per lot, safe delivery; fertile queens, 2s. 9d. each.—BRADFORD, Tibberton, Droitwich. v 90

Editorial, Notices, &c.

CHESHIRE B.K.A.

The Cheshire B.K.A. held their annual show at Chester on August 27th, in connection with the Cheshire Agricultural Society's Show. The weather was beautiful, and brought a record attendance to the show-ground. A large number of the visitors attended the lecture given by Rev. T. J. Evans, M.A., in the bee-tent during the afternoon, and as a proof of the interest taken fifty-three copies of the Association booklet, "On the Keeping of Bees," were sold. The entries of bee products numbered 114, only one less than last year. The quality of both honey and wax was excellent. The following is a list of the prize-winners:—

OPEN CLASSES.

Bee-hive.—1st, H. G. Tunstall, Rainhill; 2nd, F. Newport, Tattenhall.

Twelve 1-lb. Sections of Comb Honey.—1st, C. W. Dyer, Compton; 2nd, W. Patchett, Caistor; 3rd, J. G. Nicholson, Langworthby; h.c., W. Reece, Tarporley; c., J. C. Dutton, Wrexham.

Twelve 1-lb. Jars Extracted Honey.—1st, H. C. Barlow, Newcastle; 2nd, S. Cartwright, Shrewsbury; 3rd, A. C. Jackson, Thetford; r., Jas. Pearman, Derby; v.h.c., A. Hulse, Knutsford; h.c., C. W. Dyer.

Observatory Hive with Bees and Queen.—1st, F. C. Kelly, Hawarden.

MEMBERS' CLASSES.

Honey Display.—1st, H. Stubbs, Crewe; 2nd, F. Newport.

Six 1-lb. Sections.—1st, W. Reece; 2nd, N. E. Broughton, Wilmslow; 3rd, H. Stubbs; r., W. Hulley, Northop; v.h.c., J. C. Dutton; h.c., W. Davies, Northop Hall.

Twelve 1-lb. Jars of Light Extracted Honey.—1st, A. Hulse; 2nd, Job Astbury, Kelsall; 3rd, W. Davies; v.h.c., J. Acton, Daresbury, and G. E. Wilson, Puddington; h.c., F. Newport and H. Stubbs; c., A. R. Coppack, Shotton.

Twelve 1-lb. Jars of Extracted Honey (medium colour).—1st, W. Vickers, Malpas; 2nd, J. C. Dutton; 3rd, S. N. Grant Bailey, Chester; r., J. Wrench, Hartford; v.h.c., A. R. Coppack; c., T. Alun Jones, Halkyn.

Two Shallow Frames for Extracting.—1st, J. C. Dutton; 2nd, T. Alun Jones; 3rd, G. Fleet, Tarporley; r., H. Stubbs; h.c., E. Atkinson, High Leigh.

Beeswax.—1st, A. R. Coppack; 2nd, Job Astbury; 3rd, J. Boden; r., E. Atkinson; v.h.c., A. Hulse; h.c., T. Alun Jones; c., H. Stubbs.

Twelve 1-lb. Jars of Extracted Honey.—1st, S. N. Grant Bailey; 2nd, J. C. Dutton; 3rd, J. Acton; r., J. E. Elwell, Crewe; v.h.c., W. Davies; h.c., W. Hulley; c., W. Lea, Crewe.

Six 1-lb. Jars of Extracted Honey (Novices').—1st, J. E. Elwell; 2nd, G. Shaw, Sandbach; 3rd, J. Cope, Weston; R. W. Johnson, Kelsall; h.c., Ed. Atkinson.—E. W. Franklin, Hon. Sec., Mouldsworth, near Chester.

SUSSEX B.K.A.

The third annual show of the Sussex B.K.A., which was held in connection with the Brighton, Hove and Sussex Horticultural Society's Exhibition, at the Dome, Brighton, on August 19th and 20th, was a decided success. The entries, which numbered 100, were of excellent quality, and the competition in all classes of extracted honey was very keen. Lectures and demonstrations with live bees were given by Mr. C. T. Overton, the Association's expert, and these were largely attended, much interest being shown by those present. Messrs. F. Kenward and C. T. Overton carried out the work of judging, and made the following awards:—

MEMBERS' CLASSES.

Six 1-lb. Sections.—1st, A. G. Davey, Hillcrest, Burgess Hill; 2nd, A. Capelin, Hodshrove, Falmer; 3rd, J. Fairall, junr., Leabridge, Hellingly.

One Shallow Frame for Extracting.—1st, Messrs. Parker and Hind, Rottingdean; 2nd, Mrs. Morris, Garden House, Hove; 3rd, S. W. Botting, Wanford, Rudgwick.

Three Shallow Frames for Extracting.—1st, A. Capelin; 2nd, Messrs. Parker and Hind.

Six 1-lb. Jars Light Extracted Honey.—1st, G. Butler, County Oak, Crawley; 2nd, S. W. Botting; 3rd, A. G. Davey.

Six 1-lb. Jars Medium Extracted Honey.—1st, G. Butler; 2nd, T. A. Sandalls, Beechwood, Rottingdean; 3rd, A. Capelin.

Six 1-lb. Jars Granulated Honey.—1st, A. Capelin; 2nd, Miss Burder, Beeches, Barcombe; 3rd, A. G. Davey.

Beeswax.—1st, W. T. Cowell, Sunnyside, Southwick; 2nd, J. Fairall, junr.; 3rd, Miss Burder.

OPEN CLASSES.

Display of Bee Produce.—1st, G. Butler; 2nd, J. Silver, Addiscombe.

Six 1-lb. Jars Light Extracted Honey.—1st, S. Sanderson, West Wratting, Cambs.; 2nd, W. Bourne, High Street, Esher; 3rd, F. Bird, Little Canfield, Dunmow.

Six 1-lb. Jars Medium Extracted Honey.—1st, S. Sanderson; 2nd, W. B. Allister, Throckenholt, Wisbech; 3rd, A. L. C. Fell, Walton-on-Thames.

Six 1-lb. Sections.—1st, C. W. Dyer, Compton, near Newbury; 2nd, T. A. Denison, The Laurels, Stockton, Rugby; 3rd, W. Patchett, Cabourn, near Caistor.

One 1-*lb. Section.*—1st, A. G. Davey; 2nd, J. Silver; 3rd, W. Patchett.

One 1-*lb. Jar Extracted Honey.*—1st, S. Sanderson; 2nd, A. Harris, Almondington, Earnley; 3rd, Miss S. Hole, The Rectory, North Tawton.—C. A. OVERTON, Hon. Sec.

OLNEY AND DISTRICT (BUCKS) B.K.A.

The Olney and District B.K.A., though only established a year ago, is steadily increasing in usefulness and in the number of its members. On August 30th the first honey show undertaken by the Association was held at Olney, and was a most successful affair. The entries numbered seventy-two, which was considered good, but more noticeable, however, was the high standard maintained throughout the whole of the exhibits. Mr. E. F. Dant acted as judge and made the following awards:—

Three 1-*lb. Jars of Light Honey.*—1st and special, A. E. Warren, Bletchley; 2nd, W. Young, Clifton Reynes; 3rd, S. Looms, Olney.

Three 1-*lb. Jars of Dark Honey.*—1st, Chas. Adams, Weston Underwood; 2nd, W. Young.

Three 1-*lb. Sections.*—1st, E. Marshman, Little Linford; 2nd, A. E. Warren.

Single Jar Extracted Dark Honey.—1st and special, Chas. Adams; 2nd, W. Young.

Single Jar Extracted Light Honey.—1st, Fred. Knight, Olney; 2nd, W. Young.

½-*lb. Jar Extracted Honey.*—1st, and special, S. Looms; 2nd, W. Young.

¼-*lb. Jar Extracted Honey.*—1st, W. Young; 2nd, S. Looms.

Beeswax.—1st, W. Snow, Yardley-Hastings; 2nd, Chas Adams.

Beeswax.—1st, Fred Knight; 2nd, Chas. Adams.

Honey Cake.—1st and special prize, Harry Perkins, junr., Olney; 2nd, E. Marshman.

A special prize, given by Messrs. Sowman, Ltd., for best piece of wax in show was won by W. Snow.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of August, 1913, was £6,675.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

THE CROYDON B.K.A. SHOW.

The Secretary of the Croydon B.K.A. asks us to remind intending exhibitors that entries for the show at Horniman Hall, Croydon, will positively close on September 22, and he will be glad to receive entries up to last post on that day.

MR. W. J. SHEPPARD.

Essex bee-keepers will be pleased to learn that their late hon. secretary, Mr. W. J. Sheppard, has been appointed Government Bee Inspector for the district of Nelson, B.C., and is to take up the duties very shortly.

AMONG THE BEES.

By D. M. Macdonald, Banff.

SUPERSEDURE CELLS.

Bees replace their queens far more frequently than we are aware. Those who handle frames much will notice evidence of cells having been constructed in their hives at some unknown time and then cut down to the foundation, or they may, with a laying queen heading the stock, unexpectedly during the summer and autumn find queen-cells well forward. At times, even mother and daughter may be discovered peacefully parading the same comb. This supersedure process is Nature's way of keeping up a line of succession by quietly disposing of the effete, or worn out, and replacing such by prolific mothers ready to multiply the species and replenish the hive. Bees, in their wisdom, know that the old queen is failing, and, even before she runs down to a very marked degree, they anticipate the event and make preparations for a succession. This shows a wonderful degree of prescience on the part of the bees. One does not wonder much that when a queen dies, is hurt in manipulation to such a degree that her egg-laying powers are impaired, or when she is killed or withdrawn by man, the intelligent little workers take almost immediate steps to replace her by creating another mother; but that they should begin their procedure weeks ahead of any special demand is little short of a marvel. It is very fortunate for bee-keepers that this gift has been granted them, else many a stock would become extinct. In the past I have made the statement that in my experience the very best queens were reared in this way; and, indeed, I have a preference for such cells over those constructed in the course of preparations for natural swarming, the only other way in which Nature steps in to do the work of queen-rearing for us. When I made this statement someone either doubted or denied any superiority, but I am of the same opinion still. I am fortified in that attitude by the testimony of at least two Americans who have had a wide experience. "Doolittle," in his "Queen-rearing," says: "The difference is in favour of queens reared to replace the old mother, when she shall get past being of use to the colony; so that I have no hesitation in pronouncing queens thus reared of the highest grade which it is possible for the intelligence of man, combined with the

natural instinct of the bees, to produce." Dr. Miller in his fifty years' experience also expresses a high opinion of supersedure cells, and declares that generally he leaves the work to the bees unless he has young queens on hand he is certain will be an improvement. He, too, certifies that bees supersede their queens very frequently, especially about the end of a big honey yield. This heather men know to their cost, for very many times the prolonged double flow from heather and clover wears them out prematurely. It must be understood that I do not advocate leaving re-queening all to the bees; what I have advised above is that those who do not go in for queen-rearing, but who wish to replace worn-out mothers, should profit all they can by any supersedure going on in hives headed by a queen with a good past record. Cells from these can easily be cut out and inserted in either nuclei or in colonies making little headway in breeding. No simpler or more effective plan can be laid before the beginner or the man too busy to attend to the systematic rearing of queens.

Queens for Increase.—Mr. Mace, page 265, innocently wonders where the queen to head the new made stock is to come from, though I had told him and others in the last lines of the preceding paragraph on page 241. The two plans were essentially the same, with one or two minor modifications, and I therefore thought it needless to repeat the instructions about queens. The "Capper" (page 287) kindly supplies a very effective way of killing two birds with the same stone, which plan I like very much. While the bees are hatching in the top storey over excluder zinc, the bees will build cells almost to a certainty. If not, a cell in the appropriate stage may be given them either in the natural state or guarded by a cell protector. Thus the bees, almost as soon as shifted, will have a virgin on hand, and at a very early date in all probability a laying queen. On special occasions I have had the young queen fertilised from the top storey through a small round hole in the rear of the upper division before shifting. In a favourable season it works well. It is advisable to provide every division with a laying queen.

Introducing and Rearing Queens.—In introducing a fertile queen we expect to find eggs in a good many cells within twenty-four hours after she succeeds in making her exit from the cage, and in course of a week several frames may be full of eggs and larvæ. Now, note what takes place when we allow nature to take its own way. For perhaps twenty-four hours at least nothing is done by the bees. Then they may adopt larvæ one or two days old for special treatment to provide a queen mother. As it may be sixteen days from the laying of the egg, this deducts five or six days, leaving ten days at least for the hatching out of the young virgin. Add to this that it is unlikely the queen will take her marital flight until about a week later, and that it will be at least three or four days after this event before she begins to lay, and we have a clear loss of over three weeks, when no eggs have been laid in the hive. Owing to various circumstances, however, the queen may not mate for about a month, in which case this period of failure to add even one unit to the population may be doubled. Six weeks in the busy season is a great loss. When a swarm issues it may be some eighteen days later before the young queen in the swarmed lot begins to lay, during which time while many bees are dying off none are added. When I think over this idea I often wonder why young fertile queens are not more frequently introduced rather than waiting for the slow process of re-queening from a newly-sealed cell due to hatch a full week after. The gain may mean six weeks.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

SLOW FEEDERS.

[8808] In your issue of the 11th inst. a correspondent (page 366) asks how the rapid feeder, described in the "Guide Book," works. What surprises me is that no one, so far as I know, has ever used your columns to express his disgust at the *slow* feeders that are so freely advertised. Perhaps, like myself, most bee-keepers have lost all hope of ever finding a satisfactory one, and confine themselves to rapid feeding in the autumn.

Yet the slow feeder obviously has its advantages, provided it is efficient. Once upon a time I bought a dozen of one make, and two of them worked comparatively well for a month. Then, one fine day, they both poured a quart of syrup into the hives in less than five minutes—and nothing I could do would persuade them to act reasonably again. Yet during the month of sanity they worked wonders.

The fact is, wherever syrup comes in contact with metal, rust is found to supervene sooner or later, with disastrous results, for even if the metal cap of an inverted feeder fits properly to start with (which it seldom does in my experience), the rust ends by interfering with the fit.

I believe I have tried all the slow feeders on the market without discovering one which works efficiently. What is required, it seems to me, is something in the nature of the Alnwick Feeder, containing some arrangement by which the flow can be reduced or fewer bees have access at one time. At present I employ this make for what little stimulative feeding I do, giving a little thin syrup every evening, but it is not wholly satisfactory as the bees can get at it too freely, and accordingly the syrup is stored. Perhaps some of your readers will tell their experiences. It is certain that, unless grievances are well aired, it will be long before a remedy is found.—H. CAMPBELL, Norfolk.

DESTROYING CONDEMNED BEES.

[8809] Mr. Herrod's article on "How to Destroy Bees" (page 321) has caused some comment, complimentary and otherwise. Permit me to quote an experience I had last year:—

A bee-keeper, some twelve miles distant, wrote asking my aid at once as his bees were crawling about in hundreds, and evidently had "Isle of Wight" disease. What should he do? I wrote telling him to sulphur them and close up the entrance, and to do this in the evening.

Next day I cycled over and found him in a terrible state, a big brushwood fire was burning, and he, equipped with a veil and a pair of socks for gloves, was dancing round it like a Red Indian. Close investigation revealed that thousands of mutilated bees were crawling about, and he was endeavouring to end their misery by jumping on them; several frames were on the fire and the bees thereon were being roasted alive. He told me he had put lighted sulphur in at the entrance, but had forgotten to close it, consequently the bees crawled out, and in so doing got burnt.

This man was by no means a novice, for he had kept bees for over five years, naturally I took it for granted he would know how to apply sulphur. Before leaving, I gave him a "hint," handed down to me by one of the "old school," that is to put well-lighted shavings in your smoker with a little sulphur on top, give a few puffs in at the entrance of the hive, closing it up with a damp cloth, with the precaution to clean your smoker out well afterwards.

In conclusion, I hope that the article in question will be widely circulated, not only among novices, but others, and that I, for one, as a lover of bees, may not be forced to witness such a sickening spectacle as the foregoing again, for this is by no means an exceptional case.—A. W. HARPER, Watford.

HONEY JUDGING.

[8810] The above is a subject that has engaged my attention for some time. So far as bee-keepers, and especially exhibitors, are concerned, it is of the greatest importance that those who aspire to the position of judge should have some qualification. After attending various shows and observing the difference in judges and their methods, I am of the opinion that they do not all take into consideration the four points, viz., colour, consistency, aroma, and flavour. At one show in particular, the judge only observed the two latter points, colour and consistency being put aside. Consequently, in the light honey class, one exhibit which was of the exact shade of the single glass supplied by the B.B.K.A. for grading honey for medium colour, instead of being disqualified for being entered in the wrong class, was awarded first prize.

If a competition on honey judging was instituted, say, at the "Royal" Show, all those who aspire to the position of judge would have the chance to get their qualification according to the B.B.K.A rule. The various exhibits being first tested by the judges and their award reserved, and the competitors who are nearest to their judgment be awarded a certificate of qualification. The examination should be held in the presence of the judges. A small entry fee might be charged to go to the funds of the B.B.K.A.

I contend that there should always be uniformity of judgment in *colour* and *consistency*, at least, leaving aroma and flavour perhaps to the individual taste.—J. S. LAWTON, Oldbury Wells, Bridgnorth.

A BEGINNER'S INTERESTING EXPERIENCE.

[8811] My first season's experience in bee-keeping has been interesting and instructive, at any rate, to myself. I started in July last year with one stock, a swarm of the same year, which came through the winter in good condition. Towards the end of April last I made an artificial swarm, and set up No. 2 hive. I subsequently had a swarm and two casts from *each* of these, sold two of them and set up two more hives.

The first three stocks gave me a surplus of 40lbs. in sections; doubtless this would have been much greater, but for the cold weather experienced in July. The last two casts (early July) I united in No. 4 hive, which, being only a makeshift, had not sufficient height for feeding. However, the bees did wonderfully well, and very soon drew out six combs, and stored and sealed a lot of clover honey. Then one day I found bees clustering round the hive and crawling in all directions on the grass. I naturally suspected

"Isle of Wight" disease, though I could find no dead bees and all disappeared by nightfall.

Upon examining the hive after a few days of this experience, I found it robbed of every scrap of stores, so transferred the frames to a better hive, and commenced feeding, when, of course, the robbing began furiously, and it seemed almost impossible to save the colony. A rag soaked with carbolic across a narrow entrance was no use, so I tried a carbolised cloth over the front of the hive for three days, but as soon as it was removed the robbers were as thick as ever. Finally, a handful of hay across the entrance had the desired effect, as this enabled the defenders to pluck up courage and organise resistance, so that after several days' furious fighting they were left in peace, and now every day they form a solid phalanx round the entrance, and repel every intruder, including the wasps, which are terribly numerous. There have been no crawlers since, and I conclude they had been the robbers gorged with honey, as I had seen many of them flying heavily or crawling in the direction of the neighbouring hive.

I am still feeding the robbed colony rapidly, but they have not yet sealed much comb. Have they time to do so yet, do you think?

I propose to unite a lot of driven bees with them, and could spare a full comb or two from the other hives if necessary. The three other stocks have not been fed since the sections were removed, as their stores are very heavy, but do you think that they should be fed until the end of September to keep the brood going?

My return from the one stock has been: £1 for two swarms sold, nearly £2 for sections, two very strong new stocks, and one weak one. The bees really seem free from disease, though this place is in the midst of a devastated area, and my original stock came from a bee-keeper who lost nearly all his stocks in the winter. Your comments and advice will be much appreciated by BEE-GINNER, Hampshire.

[There is still time for the bees to seal over a good portion of the stores if the weather continues warm. We should not rob the other hives of their stores, but trust to the robbed lot getting through on their own. It is too late now to feed for brood-rearing.—EDS.]

A BEE TAKES A CRUISE!

[8812] At noon on Wednesday, the 13th August, one of my friends noticed a bee on the fore deck of my sailing craft, "The Cloon." We were getting ready to cruise down Lough Derg, Ireland, a lake of some thirty miles in length and in its broadest fifteen miles, and at that time we were leaving the boat-pier of Portumna Castle, County Galway. As the wind was light we sailed gently out of the bay, the bee following us. When out in what may be termed the main channel, or centre of the great lake, the bee was still with us. Her manner of procedure was curious. Occasionally she would alight near the main-mast for a few minutes, then she would take great circles round the craft as it sped on, but always returned to the neighbourhood of the boat. When we had got seventeen miles down the broadest part the wind freshened, and we probably were sailing some seven miles an hour. But either flying towards the bow, ahead, or whizzing back towards the stern, our litle brown friend was all the while in evidence. But our pace was too slow for her. She would make great circles of sixty or eighty yards and come round to us, then go ahead. In this way we covered about twenty miles. When we entered the Castle Harbour in Dromineer Bay at five o'clock, Mrs. Bee, seeing we did not restart very quickly, got disgusted and went her way on another voyage—for we lost her.

It is a fair estimate to state that if we covered twenty miles of actual distance the plucky insect must have covered sixty miles.

Probably this is not the first bee voyage, but I thought it so remarkable and so interesting that I send you these notes, as it may be interesting to naturalists as well as to others.—T. H. HOLDING. London, Sept. 8th, 1913.

USING APICURE.

[8813] Is there any need after using apicure in stocks affected with foul brood, of changing combs, or do the bees clear the cells out themselves? My bees are perfectly healthy as far as I can judge, but I thought it would be useful to know. I find your journal a great help to me, and you can judge my success this year when I tell you that from four hives I've disposed of £12 worth of honey.—W. H., St. Austell

[The bees will clear out the cells.—EDS.]

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

A Mixed Diet (p. 228).—A kindly correspondent, Mr. W. Munro, of Dundee, draws my attention to a serious oversight. In the highly interesting contribution on "Bees in East Africa" occurs the astounding statement that "the Wa Ndorobo, or Ogieh, live to a *very great extent* on honey, men, women, children, and dogs" (the italics are mine). That this amazing statement, calmly made by one who has "had a unique opportunity of observing the native *bee-keepers*," should

have escaped protest of any kind by some of our philanthropic societies for the protection of everything in particular, seems difficult of belief, but there it is. Of course, before taking action, one would make proper enquiry as to the facts, but the extent of the diet seems to preclude the possibility of natural death, and equally unlikely seems the preservation in honey of bygone generations for eating *en suite* by their descendants. This condition of things is worse than that of Central Africa, where the Niam-Niam eat their enemies, but that these anthropophagous and canine-nibble folk should be bee-keepers is a grievous reflection. Hence this protest!

Lysol (p. 327).—This remedy was first brought to my notice by Mr. Geo. M. Saunders, at Keswick, some ten years ago. He used it, I understood, with some success in the treatment of foul brood. Mr. Hadlow's method of using seems sound, but it is perhaps troublesome to have to remove any portion of the hive during treatment. A special form of division board on Mr. Gillamore's lines might be better. Simply place several layers of absorbent gauze upon an ordinary division board, and over all a sheet of perforated zinc. Fasten the zinc down with a few nails, without driving the nails home, so as not to compress the gauze unduly. Bevel the top edge of the board so that a channel is formed, into which a little of the solution can be poured from time to time to find its way down the gauze and evaporate through the perforations. The gauze and zinc should be brought right up to the top of the board.

The Smoker (p. 333).—A fine screen is very well while the smoker is new, and those who can afford a succession of new smokers may well like it. But it has a tendency to clog with fluffy fuel, and creosote. Cleaning is troublesome, and occasionally it becomes damaged past repair. An efficient substitute is a small, loosely made ball of grass. This acts as an efficient filter, and can be renewed in a moment as often as desired. The screen, which is sometimes fitted at the breech, is also a mistake. Something is needed to prevent the fuel from dropping down, which often results in the extinguishing of a newly-lighted charge. A stout cross wire, riveted in, is very satisfactory.

Removing Supers from Vicious Bees (p. 335).—May I suggest to the Rev. I. Kendal a special form of super-clearer made like a Rymer board, but double, so that sliding one board upon the other will close the openings. In one or more of the lower slats and near the end, Porter escapes can be fitted. The escapes should be protected from below by slides of metal, which can be withdrawn at the time of closing the boards. The upper slats should cover them during the season. The whole of the sliding parts should be *liberally* vaselined. Excessive propolis might cause difficulty, in which case blocks might be fastened to the edges in such a way that a flat tool (screwdriver) could be used as a prise. If this description is not sufficiently clear, I shall be glad to furnish a drawing of what I believe would meet the difficulty with Rhodesians.

Use of Skeps (p. 337).—I do not know that Mr. Heap refers specifically to me as an "inscrutable" reasoner, but I am willing to "put the cap on." I have, however, fairly given my reasons for defence of the skep. Mr. Heap announces with rather an air of triumphant discovery that lack of ability is the reason for persistence with this inferior type of hive. The fact is that the skep is pretty well fool-proof, and the frame-hive is not. Of course, this lack of ability is one reason, but it is no reason for legislating the weaker brethren out of existence, unless they can be proved to be detrimental to the industry at large. Even so, the skep is not necessarily at fault. There are those who emphatically maintain that the skeppist *per se* is so detrimental, but I am not sure. Hence my tolerance. The skep is by no means a "sealed book" to a really practical man, whose incidental liberty should not be unreasonably prescribed. In common with most of the advocates of the frame-hive, Mr. Heap says "Profit" in a loud and prophetic voice. Well and good, but a number of skeppists are content to keep bees, in the manner of their forefathers, for their pleasure and use. That they sell honey at all is, on the showing of their critics, a reflection upon the more modern bee-keeper, who, with his improved methods, ought to have taken their market, were his commercialism entirely triumphant!

Queries and Replies.

[8819] *Judging Sections.*—Will you kindly say in the BEE JOURNAL what are the usual points observed in judging honey in *sections*? I noticed at a local show that the comb was *broken* in order to taste the honey. Consequently, in their turn, visitors came round to have a taste, with the result that very fine samples were rendered unfit for further exhibition or for sale in the comb. At what disadvantages are *local* judges placed in when they have to deal with competition as enclosed extract, *viz.*, extracted and comb honey in *one* class? Is it possible to make awards under such conditions?—ROBERT ELLIS.

REPLY.—The usual points are flavour,

filling, sealing, colour and general get-up. It is unusual for judges to break more than an odd cell or two at the side to taste the honey. Comb honey should be glazed so that visitors cannot touch it. It is certainly unfair to ask competitors to stage comb and extracted honey in the same class.

[8820] *Feeding for Winter.*—Will you kindly inform me through the medium of your valuable journal:—(1) How much syrup the bees ought to have daily, and (2) the quantity of candy necessary for each colony? (3) How long shall I continue to give syrup before closing down for the winter? I am sorry to say it has not been a good season in the part of Kent where I live.—Elham, Kent.

Reply.—(1) At this time of the year give as much as they will take. (2) Put on a 1lb. cake of candy and renew when eaten up. (3) Until the bees have 30lbs. of stores or eight combs well filled with food.

[8821] *Beginner's Queries.*—A little help on the following one or two points in apiculture will very greatly oblige:—(1) I have one fairly strong hive in which there are eight nicely-filled frames in brood-chamber, also a rack of sections not yet touched, although they have been on for quite three months. I have not taken any honey this year, as I did not think the stock was strong enough to spare any surplus. As the sections have not been filled, is it advisable to take one or two frames of honey, or leave it for the winter? (2) When should the bees be finally covered up for the winter.—W. R. F. S.

Reply.—(1) Leave it for the winter. (2) Last week in October.

[8822] *Making Soft Candy.*—In making soft bee candy, can you kindly tell me what degree of temperature, by *thermometer*, is equivalent to the finger-scalding test? I find that individuals differ in the degree of heat they can stand, and surely the risk of scalding a finger by premature trials is not necessary!—S. J. G., Forres.

Reply.—If you had taken the trouble to look at your "Guide Book," page 195, at the nineteenth line from the top, you would have seen that the temperature necessary is 235 degrees Fahrenheit.

FOUL BROOD ACT OF BRITISH COLUMBIA.

A correspondent has forwarded to us a copy of the Bee Diseases Act for British Columbia, which will interest readers in view of the desire for legislation by progressive bee-keepers in this country:—

AN ACT FOR THE SUPPRESSION OF FOUL BROOD AMONG BEES.

1st March, 1911.

His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of British Columbia, enacts as follows:—

1. This Act may be cited as the "Foul Brood Act, 1911."

2. (1.) The word "Minister," whenever used in this Act, shall mean the Minister of Finance and Agriculture for the Province of British Columbia.

(2.) The word "Inspector" shall mean Inspector of Apiaries for the Province of British Columbia.

3. The Lieutenant-Governor in Council may from time to time appoint such person or persons as he shall think proper to act as Inspector or Inspectors to carry out the provisions of this Act, and such Inspectors shall be under the direction and control of the Minister.

4. (1.) The said Inspector shall, whenever so directed by the Minister, visit without unnecessary delay any locality in the Province of British Columbia, and there examine such apiary or apiaries as the said Minister may direct, and ascertain whether or not the diseases known as "foul brood" or "black brood," or either of them exist in such apiary or apiaries, or in their vicinity.

(2.) Wherever the said Inspector is satisfied of the existence of such disease in its virulent or malignant type, he shall order all colonies so affected, together with the hives occupied by them, and the contents of such hives and all tainted appurtenances or appliances that cannot be disinfected, to be immediately destroyed by fire under his personal direction and superintendence, and in such manner as may be necessary to prevent the spread of the said disease, and to thoroughly disinfect any appurtenances or appliances capable of being disinfected.

(3.) Where the Inspector, who shall be the sole judge thereof, is satisfied that the disease exists, but only in milder types and in its incipient stages, and is being or may be treated successfully, and has reason to believe that it may be entirely cured and eradicated, then the Inspector may omit to destroy or order the destruction of the colonies and hives in which such disease exists, but shall give the owner or caretaker of the diseased apiary or apiaries full instructions how to treat said cases. The Minister shall cause said apiary or apiaries to be visited from time to time, as he may deem best, and if after proper treatment the said bees shall not be cured of the disease, then he may cause the same, with the hives and all tainted appurtenances and appliances, to be destroyed as in the preceding subsection hereof provided.

(4.) After inspecting infected hives or fixtures or handling diseased bees, the

Inspector shall, before leaving the premises, or inspecting any other colony of bees or proceeding to any other apiary, thoroughly disinfect his own person and clothing, and shall see that every assistant with him also thoroughly disinfects his person and clothing.

5. The Inspector shall have full power, in his discretion, to order any owner or possessor of bees dwelling in box hives (being mere boxes without frames) to transfer such bees to movable frame hives within a specified time; and in default of such transfer, the Inspector may destroy or order the destruction of such box hives and the bees dwelling therein, or may himself cause such bees to be so transferred.

6. Any owner or caretaker of diseased colonies of bees, or of any affected appliances, who knowingly sells, or barters, or gives away such diseased colonies or any bees, comb, or honey therefrom, or any infected appliances, shall, on conviction thereof before any Justice of the Peace, be liable to a fine of not less than fifty dollars, and not more than one hundred dollars, or to imprisonment for any term not exceeding two months.

7. Any person whose bees have been destroyed, or are being or have been treated for foul brood or black brood, who sells or offers for sale any honey-comb, honey, bees, hives, appurtenances, or appliances of any kind after such destruction or treatment, and before being authorised by the Inspector so to do, or who knowingly exposes in his bee-yard or elsewhere any infected comb, honey, or other infected thing, or conceals the fact that said disease exists among his bees, shall, on conviction before a Justice of the Peace, be liable to a fine of not less than twenty dollars and not more than fifty dollars, or to imprisonment for a term not exceeding two months and not less than one month, or both such fine and imprisonment.

8. Any owner or caretaker of bees who refuses to allow the Inspector or his assistant or assistants to freely examine his bees or the premises in which they are kept, or who refuses to destroy the infected bees and appurtenances or to permit them to be destroyed, or who refuses to transfer bees dwelling in box hives to movable frame hives, when so directed by the Inspector, shall, on conviction before a Justice of the Peace, be liable to a fine of not less than twenty-five dollars and not more than fifty dollars for the first offence, and not less than fifty dollars and not more than one hundred dollars for the second or any subsequent offence, and the said Justice of the Peace shall make an order directing the said owner or possessor forthwith to carry out the direction of the Inspector.

9. When an owner or caretaker of bees disobeys the directions of the said Inspector, or offers resistance to or obstructs the said Inspector in the performance of his duties, a Justice of the Peace shall, upon the demand of the said Inspector, cause a sufficient number of special constables to be sworn in, and such special constables shall, under the direction of the Inspector, proceed to the premises of such owner or caretaker and assist the Inspector to seize all the diseased colonies and infected appurtenances and appliances and burn them forthwith; and if necessary the said Inspector or constables may arrest the said owner or caretaker and bring him before a Justice of the Peace, to be dealt with according to the provisions of the preceding section of this Act.

10. Every bee-keeper or other person who is aware of the existence of foul brood or black brood, either in his own apiary or elsewhere, shall immediately notify the Minister of the existence of such disease, and in default of so doing shall, on summary conviction before a Justice of the Peace, be liable to a fine of not less than five dollars nor more than twenty-five dollars and costs for each such offence.

11. Upon receiving the notice mentioned in the preceding section, or in any way becoming aware of the existence of foul brood in any locality, the said Minister may direct the said Inspector to immediately proceed to and inspect the infected premises; but where the person giving such notice is unknown to the Minister, or there is reason to believe that the information in said notice is untrustworthy, or that the person giving such notice is actuated by improper motives, then the Minister may require the person giving such notice to deposit with him such sum as the Minister may decide, not exceeding ten dollars, as a guarantee of good faith, before the said notice is acted upon, and if it proves that said notice was properly given, then the said deposit shall be returned to the person giving such notice, but otherwise the said deposit shall be forfeited.

12. The Minister shall have power to order into quarantine at the point of entry into the Province of British Columbia, or such other place as he may appoint, for a period of not more than nine months, and if found to be infected may order to be destroyed, any or all bees imported into the Province of British Columbia; also to order the disinfection of all bee appliances that have been in

use, and to order the destruction by fire of all combs and frames in empty hives.

13. The Inspectors appointed under the provisions of this Act shall be paid such salary or remuneration as the Minister may from time to time determine.

14. The Minister may from time to time, subject to the approval of the Lieutenant-Governor in Council, make rules and regulations for carrying out the purposes of this Act.

Bee Shows to Come.

September 24th, at Altrincham.—Honey Show, under management of Cheshire Bee-keepers' Association, in connection with Altrincham Agricultural Society's Show. **Entries closed.**

Sept. 24th and 25th, at Kendal.—The Annual Show of Honey, Wax, and Appliances of the Cumberland and Westmorland B.K.A., in connection with the Northern Counties Fruit Congress, in the Market Hall, Kendal. Eleven open classes. Liberal prizes. Note.—All prize-money will be paid on second day of show. Schedules from G. W. Avery, Wetheral, Carlisle, or Geo. Chatham, Low Green, Staveley, Kendal.

September 25th, at Horniman Hall, North End, Croydon.—Exclusive show of Honey, Wax, Hives, Bees, &c. Increased prizes. Six open classes. Entry fees 1s. each class. Judge, W. Herrod, F.E.S. Schedules from A. Wakerell, 83, St. John's-road, Redhill.

September 27th, at County Technical Buildings, Stafford. Under the management of Staffordshire Bee-keepers' Association. Exhibition of Honey, Bees, Beeswax and Cakes. Open to members of Staffs. B.K. Association only. Classes for Cottagers and Novices. Schedules from C. R. Forse, Trentham, Stoke-on-Trent.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

August, 1913.

Rainfall, 2·52 in.	Minimum on grass,
Below average, ·32 in.	35 on 6th, 21st, & 25th.
Heaviest fall, 1·40 on 31st.	Frosty nights, 0.
	Mean maximum, 67·6.
Rain fell on 11 days.	Mean minimum, 51·3.
Sunshine, 183 hrs.	Mean temperature,
Below aver., 30·7 hrs.	59·3.
Brightest day, 1st, 13·2 hrs.	Below average, 0·9.
	Maximum barometer,
Sunless days, 1.	30·329 on 25th & 26th.
Maximum temperature, 75 on 28th.	
	Minimum barometer,
Minimum temperature, 42 on 6th & 25th	29·700 on 30th.

L. B. BIRKETT

Notices to Correspondents.

A W. B. (Buckhurst Hill).—*Suitable Sugar for Syrup-making.*—(1) Refined cane sugar, not Demerara, is the kind to use for bees. (2) Neither are suitable for the purpose. (3) The syrup has probably not been sufficiently boiled; a little vinegar is usually added to prevent crystallisation. (4) We have never used this feeder, but we should say it does not come up to its name if it has the disadvantages you mention.

W. A. F. (Castle Cary). *Selling Honey.*—We have sent you the name of a possible purchaser under separate cover. The wax was not in the package which arrived here broken open. You will have to meet the requirements of your customer as to whether the honey is liquefied; the majority of buyers prefer it liquid. The honey should fetch 56s. to 60s. per cwt.

J. HILL AND SON.—*Section Honey Tainted with Smoke.*—Either the sections were stored near something that has tainted them, or you have used too much smoke when removing the supers.

K. H. CHUN (Tientsin).—*A Foraging Bee's Load.*—With perhaps the exception of very early spring, bees carry pollen and nectar at the same time.

A. B. H. (Congleton).—*Dealing with Combs from Diseased Stock.*—Melt down the combs and burn the frames. It is the only safe course to take.

E. BERNEY (Caterham).—*Black Bees in Italian Stock.*—The bees are robbers, and are black simply because in fighting their bodies have been denuded of the hair. As you say the black bees are being thrown out of No 2 stock it is evident that this is being attacked also. Steps should be taken to stop the mischief.

QUEENLESS (Halesworth). — *Hybridising Bees.*—Either cross would result in hard working bees, but the chances are that they would be vicious and difficult to handle. Also they would have a greater tendency to swarm than natives. Our advice is let hybrids alone.

A. S. D. (Bearpark).—*Syrup for Bee-food.*—The syrup is not at all suitable for feeding bees. It has evidently been made from unrefined sugar, and appears to have been burnt while making.

Honey Samples.

W. E. G. (Dulwich).—*Selling Honey.*—Of your samples, No. 1 is worth 56s. per cwt. in bulk, 9s. 6d. to 10s. per doz. jars, or 10d. per lb. No. 2 worth 50s. per cwt., 8s. 6d. to 9s. per dozen jars, or 8d. per lb. We thank you for your kind letter; we feel amply repaid for the advice we give, when reading kindly sentiments such as are expressed by yourself, and numerous other readers. Our experience and advice are always at the disposal of our readers gratuitously; all we ask is that they should have a little patience at times. A correspondent the other day gave us a "blowing up" because, while we were away on our annual holiday, he had to wait for a few days for (gratuitous) help. However, such letters are few and far between; our correspondence is usually of the kindly nature of yours.

T W. (Old Colwyn).—Both samples are rather lacking in density, but of nice aroma and flavour, though no particular source can be named. Good enough for entering at local show. Would have to be classed as light honey, as they are not dark enough for the medium class. No. 1 is the better honey. No. 2 is showing signs of granulation.

MAYHEW (Sussex).—No. 1, a very light honey of good flavour and density; No. 2, not so good and granulating rather coarsely, but a nice honey on the whole: No. 3, a very nice granulated honey, smooth in grain, of good flavour, quite suitable for the show bench.

E. H. L. (Radnors).—Both samples are fairly good in consistency, colour and flavour. From mixed sources; No. 2, partly from the blackberry. Not first-class honeys, but very palatable, and should sell at 9d. or 10d. per lb. retail. We prefer No. 2 as a table honey.

CHEAM (Sutton).—The honey is quite wholesome, and has been gathered from a mixture of late flowers, with a very little heather included. Worth 9d. per lb. retail.

RG. D. (Isle of Man).—Your sample is a very good heather blend, and as such is suitable to show.

E. C. (Cornwall).—The honey is from clover, and is excellent in all points. (2) Certainly should stand a fair chance in an open competition at a big show. (3) Your suggested selling price is a good amount, but the honey is worth it.

Suspected Disease.

J. T. (Horndon) and T. R. G. (Rawtenstall).—The bees have "Isle of Wight" disease.

BEE WISE (Congleton).—The comb contains foul brood in the dry scale stage. This has not been cleaned out, although you have used disinfectants, owing to the bees' inactiveness through their being affected with "Isle of Wight" disease. Destroy both lots at once, so as to save the swarm if possible. It will also be best to melt down the shallow combs and burn frames, &c.

W. F. P. (Dursley).—The bees were too dry for examination.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½*in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

HONEY, good quality, bulk, 56s. cwt.; bottles, 9s. dozen, f.o.r.—34, Station-road, King's Norton, Birmingham. v 1

EXTRACTED ENGLISH HONEY, 56s. per cwt.; sample, 2d.—DUTTON, Terling, Essex. v 11

1913 YOUNG FERTILE QUEENS, in introducing cage, guaranteed healthy, 2s. each, a few left.—W. J. JOCKMAN, Sidney Farm, Cherryhinton, Cambridge. v 2

WANTED, following appliances, secondhand, good condition, Cowan honey extractor, honey ripener, wax extractor, honey press, lamp.—DAVIES, Haulfryn, Barmouth. v 3

FOUR pure bred brown buff Orpingtons, sell, or exchange anything in bee line.—NICHOLLS, Wanstron, Post Office, Shepton Mallet. v 5

FIVE strong stocks of bees, in standard frame hives, 20s. each, f.o.r.—W. PRINGLE, 2 Commercial-square Winlaton, Blaydon-on-Tyne. v 10

WANTED, first quality heather sections; state prices f.o.r.—J. GLADDING, Bingfield, Corbridge. v 8

WANTED, good clover honey, in exchange for seltzogine, cost 18s.; banjo, 30/-; Panama hat, 30/-; honey drum, 1 cwt., 10/-; lady's bicycle frame, oil cake breaker, all good; what offers? or sell cheap.—156, Moston-lane, Manchester. v 13

FINEST pure extracted honey, 15s.; 28lb. tins, screw cap jars, 9s. dozen, f.o.r.; sample, two stamps.—WHEATCROFT, Ashby-de-la-Zouch. v 4

1913 SELECTED QUEENS, bred from proved "Isle of Wight" immune parent, two now available, 4s. each.—ATKINSON, Thorpland-road, Fakenham. v 93

LIGHT EXTRACTED, 58s. per cwt.; sample, 2d., f.o.r.; or exchange for camera.—SIMCOX, 17, Victoria-road, Fallings Park, Wolverhampton. v 93

WANTED, a good secondhand extractor, cheap. —W. MOODY, Taylor Wood, Wragby, Wakefield. v 100

SIX DOZEN 1lb. screw top glass bottles extracted honey, 8s. 6d. dozen, in returnable crates; two dozen empty hives, in excellent condition, guaranteed free from disease, Lee's and Taylor's Colonial pattern, cheap.—MARRIOTT, Black Notley, Braintree, Essex. v 80

100 LB. finest pale clover honey, 6½d. per lb., free on rail, cash with order; sample, 3d. —NYE, The Orchards, Sonning Common, Oxon. v 85

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

WANTED, heather sections.—FISON, Rawdon, Leeds. v 12

HEATHER HONEY WANTED, in large or small quantities, by City firm.—Send sample, price, and particulars, to F. R., "B.B.J." Office, 23, Bedford-street, Strand, W.C.

DRIVEN BEES and young heather queens, heather sections, and honey, now ready; twenty strong stocks, standard hives, full of stores, 25s.; original Rymer honey press, 30s.—T. HOOD, expert, Pickering. v 9

QUEENS.—Three young black queens, hardy and healthy, 2s. 6d. each.—C. PARISH, Addington, Surrey. v 7

HEALTHY DRIVEN BEES, free from "Isle of Wight" disease, in 4lb. lots, with a young queen, 1s. 6d. lb., boxes free and on rail; also young, healthy queens, at 2s. 6d. each, in introducing cage, and post free; cash with all orders. —R. BROWN and SON, Flora Apiary, Somersham, Hunts. v 6

1913 PURE FERTILIZED QUEENS.—Swiss, 5s.; Carniolans, 3s. 6d.; Italians, 3s. 6d.; safe arrival guaranteed, cash with order.—FREDERICK VOGT, 63, Beresford-road, Canonbury, London, N.

FERTILIZED 1913 HYBRID QUEENS, 2s. 9d. each; two for 5s.—FREDERICK VOGT, 63, Beresford-road, Canonbury, London, N.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held at 23, Bedford Street, Strand, London, W.C., on Thursday, September 18th, 1913. Mr. W. F. Reid presided. There were also present: Miss M. D. Sillar, Messrs. T. Bevan, C. L. M. Eales, J. Smallwood, H. Jonas, E. Watson, A. G. Pugh, J. B. Lamb, R. H. Attenborough, E. Walker, H. P. Perkins, A. Richards, and Col. H. J. O. Walker. Association representatives: Miss H. Inglis (Croydon), Rev. F. S. F. Jannings (Yorks), D. Seamer (Lincoln), G. J. Flashman (Barnet), G. R. Alder (Essex), G. Bryden (Crayford), F. Harper (St. Albans), and A. R. Moreton (Worcester), and the Secretary, W. Herrod.

Letters expressing regret at inability to attend were read from Messrs. T. W. Cowan, G. W. Avery, W. J. Sanderson, G. S. Faunch, C. A. Pinker, G. W. Judge, and Capt. Sitwell.

The minutes of the Council meeting held July 3rd, 1913, were read and confirmed.

The following new members were elected: Miss R. Page, Miss M. M. Faulkner, Mr. W. Bacon, Mr. E. J. Sumner, Mr. W. F. Judge, Mr. A. Park, and Mr. W. Young.

The Olney and District Association nominated the Rev. G. F. Sams as their representative, and he was accepted.

The report of the Finance Committee was presented by Mr. J. Smallwood, who stated that the payments into the bank for July amounted to £33 19s. 8d., and for August to £3 18s. 3d.; the bank balance at the end of August being £209 17s. 1d. Payments amounting to £93 12s. were recommended.

The report on the paper work for the First Class Examination was presented, and it was resolved that the following be asked to take the lecture test: Messrs: C. H. Heap, B. Blackbourn, H. H. Brook, G. R. Alder, E. Watson, G. J. Flashman, H. Goude, J. Herrod, J. Price, and Rev. W. E. Mattinson.

A unanimous vote of thanks was passed to Col. Walker for his kindness in undertaking the arduous duties of marking the papers.

The Examining Board's report on the lecture test was presented by Col. H. J. O. Walker, and it was resolved to grant First-class Expert's Certificates to Messrs. G. R. Alder, E. Watson, J. G. Flashman, and H. H. Brook.

Reports on Preliminary examinations held at Stone, Aberdeen, Worcester, Hinckley, Keswick, Croydon, Moulds-worth, Beeston, Newcastle, St. Albans, Henwick, Swanley, Gloucester, Cardiff, Bridgwater, Studley, Northampton, Crayford, London, Bradford-on-Avon, Bristol, and Lincoln; it was resolved to grant certificates to the following: Mrs. E. L. Jones, Mrs. E. Copping, Misses E. B. Fawssett, H. D. Wormwell, G. B. Redmayne, E. H. Lewer, U. Thompson, G. Sievier, J. Appleyard, A. Fotheringham, P. Ashwell, T. Caldwell, E. Wallace, E. Rutherfoord, E. Whitehorn, W. G. Gardiner, M. Keller, E. Van Ryssleberghe, E. J. Wilkinson, F. Heron, H. Weber, A. Bird, B. Ritter, N. Bayly, H. Longhurst, M. Powell, E. Alexander, M. Reeves, N. Drage, P. Farrar, E. Durell, W. Fay, N. Fay, S. Dill, D. Daffarn, D. George, M. Shillidy, U. Morris, L. Gadsden, D. Carey, E. Tempest, O. Laycock-Robinson, R. Dawson, F. M. D. Burder, C. Wilkinson, Messrs. A. H. E. Wood, W. Taylor, J. W. Stevenson, G. Blyton, W. A. Simkins, W. J. Warren, G. W. Morris, A. Palmer, J. C. L. Renton, A. Briers, A. C. Tarpley, S. R. Dawes, G. F. Stubbs, W. T. Dennis, H. Skelding, C. J. Wiltshire, C. Spiller, J. Rees, T. Davis, D. Hardcastle, K. Jones, F. Harris, J. Apse, J. Hickman, B. Rowley, G. E. Goodall, W. Shuker, D. Lindsay, G. Leek, T. Bradley, J. E. Mason, G. W. Avery, D. Bouch, G. H. Lowther, C. H. Rose, G. J. C. Vincent, A. E. Barnes, H. Klanke, H. Smith, G. G. Robson, H. Harmer, J. Smith, R. Robson, R. H. Attenborough, W. J. F. Goodwin, F. Jones, E. G. Porter, A. V. Watson, W. Garwell, F. W. Owen, E. G. Burtt, H. Brighton, W. Dale, J. E. Greenhalgh, C. J. Edwards, A. Greenfield, C. A. Barcham, W. E. Brashier, A. A. E. Tucker, J. S. D. Thomas, H. R. Willis, J. W. Ford, J. J. Hedges, W. H. White, E. A. Norris, Revs. T. Featherstone, Gower Jones, F. S. F. Jannings.

Arrangements were made for the conversazione on October 23rd. It was resolved to ask Mr. Cowan to give the concluding part of his lecture on "Bee-keeping in other Countries," illustrated by lantern views; and the offer of Mr. H. J. Menzies to read a paper on "Marketing Honey" was accepted. The conversazione to be from 5 p.m. till 9 p.m., and that during tea-time bee-keeping novelties be exhibited on a side table.

It was resolved that the Intermediate Examination (Second Class) be held on November 28th and 29th, 1913. Mr. D. M. Macdonald was appointed examiner.

The Judge's report on the Honey and Hives Department at the Royal Show at Bristol was read.

It was proposed by Mr. Lamb, seconded by Mr. Eales, that the designs for the new certificates be submitted to Mr. Cowan, Mr. Reid, and Col. Walker, and that they have power to act.

Mr. Reid said that, as the appointed delegate of the British Bee-keepers'

Association, he had attended the International Agricultural Conference at Ghent, and, although the work was mainly connected with cattle, he had held up bee-keeping as much as possible.

A very hearty vote of thanks was unanimously passed to Mr. Reid for his kindness in attending on behalf of the Association.

Next meeting of Council, October 23rd, at the Zoological Gardens, Regent's Park, N.W.

GROCERS' EXHIBITION.

The twenty-first annual exhibition of the Grocers and Allied Trades was opened at the Royal Agricultural Hall, Islington, London, N., on Saturday, September 20th, and will close on the 27th inst. The honey competitions are now an established success, and, as usual, quality and quantity are quite up to the standard expected at such an important show.

One noticeable feature is that the heather classes for both sections and jars are better filled than ever before. The judges' task was no light one; Messrs. E. Walker and O. R. Frankenstein were trusted with this onerous duty and made the following awards:—

Outfit for Beginner in Bee-keeping (two entries).—1st, Jas. Lee and Son, Uxbridge, Middlesex; 2nd, Mrs. Seadon, Stanley Road, Bromley, Kent.

Display of Honey and Honey Products, Shown in Suitable Form for a Tradesman's Window (four entries).—1st and silver medal, J. Lee and Son; 2nd, J. Pearman, Penny Long Lane, Derby; 3rd, C. W. Dyer, Compton, Newbury, Berks; 4th, A. G. Wiggins, 1, Swinderby Road, Wembley.

Twelve 1-lb. Sections (fifteen entries).—1st and bronze medal, J. Lee and Son; 2nd, R. Robson, Cheviot Street, Wooler; 3rd, T. G. Hillier, Hurstbourne Tarrant, Andover; 4th, J. Pearman; 5th, R. Brown and Son, Somersham, Hunts.

Twelve 1-lb. Heather Sections (twelve entries).—1st, R. Robson; 2nd, H. Waddington, Kirby Hill, Borobridge, Yorks; 3rd, T. Sleight, Danesmoor, Derbyshire; h.c., J. M. Balmbra, East Parade, Alnwick.

Three Shallow Frames of Comb Honey (eight entries).—1st, J. Lee and Son; 2nd, Miss Harwood, Stratford Road, Salisbury; 3rd, G. F. Gibbons, Neston, Corsham, Wilts; h.c., A. W. Burgoyne, Lyonshall, Kington.

Twelve 1-lb. Jars Light-coloured Extracted Honey (sixty-one entries).—1st and Certificate of Merit, J. Herrod, Sutton-on-Trent, Newark; 2nd, Studley Horticultural College, Studley Castle, Studley; 3rd, T. G. Hillier; 4th, H. R. Millington, Wistanswick, Market Drayton; 5th, W. Patchett, Caistor, Lincs.; h.c., H. S. Duckering, East Barkwith, Lincoln; R. E. Garrett, Blue Posts House, Witham; S. N. Grant-Bailey, Wadenhoe, Hough Green, Chester; W. H. Allard, Stockton, Rugby; and A. Herring, Brauncewell Lodge, Wellingore.

Twelve 1-lb. Jars Medium-coloured Extracted Honey (thirty-two entries).—1st, G. Kennedy, Odell, Beds.; 2nd, T. Marshall, Sutton-on-Trent, Newark; 3rd, C. H. F. Rose, 159, Blagdon Road, New Malden; 4th, A. MacCullah, Webberton, Exeter; h.c., W. B. Allister, Throckenholt, Wisbech; T. A. Denison, Stockton, Rugby; C. E. Billson, Cranford, Kettering; and S. E. Baumbrough, Linslade, Bucks.

Twelve 1-lb. Jars Dark Extracted Honey (eleven entries).—1st, T. Marshall; 2nd, H. Weston, Barlestone, Nuneaton; 3rd, J. Pollard, Tingewick Mill, Buckingham; h.c., A. MacCullah, R. Brown and Son, and J. Pollard, High Street, Tingewick.

Twelve 1-lb. Jars Heather Honey (thirteen entries).—1st, A. Young, East Street, Chatham; 2nd, J. Pearman; 3rd, J. Herrod; h.c., J. H. W. Fishwick, Chatburn, Lancs.

Twelve 1-lb. Jars Heather Blend (twelve entries).—1st A. G. Pugh, Beeston, Notts; 2nd, A. Young; 3rd, T. Marshall; 4th, J. H. W. Fishwick; h.c., M. J. Lamboll, Liddinghurst, Chiddingfold, and J. Fordyce, Abington, Lanarks.

Twelve 1-lb. Jars Granulated Honey (twenty-one entries).—1st, J. Herrod; 2nd, R. H. Baynes; 51, Bridge Street, Cambridge; 3rd, W. B. Allister; 4th, J. Pearman; h.c., J. Dalby, Croughton, Brackley; S. Cartwright, Shawbury, Shrewsbury; and W. Beken, Biddenham, Kent.

Beeswax in Cakes for Retail Counter Trade (nine entries).—1st, Mrs. F. Harris, High Ferry, Sibsey, Boston; 2nd, J. Pearman; 3rd, A. MacCullah; 4th, W. Goodburn, Church Street, Oakham.

Beeswax (judged for quality only) (twenty-two entries).—1st, W. Patchett; 2nd, Miss Harwood; 3rd, Mrs. Harris; 4th, E. C. R. White, Newton Toney, Salisbury; h.c., J. Pearman, A. MacCullah, and W. S. Halford, West Wratting Lodge, Cambs.

HONEY SELLING CLASSES.

Extracted Honey in Bulk.—Certificates of Merit to J. B. Marshall, Garforth, Leeds; W. Tucker, Jump, Highbickington, Umberleigh; W. Tovey, 53, Eastleach, Lechlade; Mrs. Granger, Abbeytown, Carlisle; and A. MacCullah.

Extracted Honey in 1-lb. Jars.—Certificates of merit to J. Rowlands, Pwllheli, North Wales; Madryn Castle Farm School, Pwllheli; S. Sanderson, West Wratting,

Cambs.; A. F. Knight, Kenwyn Apiaries, Truro; W. Shuker, Middleton Scriven, Bridgnorth; W. Tucker; J. T. Duckmanton, Langwith, Mansfield; Mrs. Granger; G. F. Gibbons, Neston, Corsham, Wilts; A. MacCullah; F. E. Lennox Brown, Little Coggeshall, Essex; and F. Humphreys, Comberton, Cambs.

1-lb. Section.—Certificates of Merit to Mrs. Williams, 40, New Row, Pwllheli, W. Goodwin, A. MacCullah, G. F. Gibbons, and F. Humphreys.

NOTTS B.K.A.

A very interesting exhibition of bees and their life and produce, and of the art and methods of utilising the services of the useful little insects in collecting honey, was opened at the Nottingham Mechanic Lecture Hall on September 12th. The exhibition is the second which has been organised by the Notts Bee-keepers' Association. Its primary object is to popularise Notts honey, the trade in which constitutes an industry of the extent of which few people are aware.

There were 123 entries compared with 166 last year. The falling off is due to the dryness of the season which, in many districts locally, has been bad for the industry, for showers are necessary to cause the flowers to secrete nectar abundantly. The exhibition of sections was rather poor, but there was a splendid show of extracted honey and of wax.

The Bee-keepers' Association and its courteous secretary, Mr. George Hayes, are to be cordially congratulated upon their interesting and comprehensive exhibition. A new feature this year, to induce a trial of honey by those who have not learnt its deliciousness, was the sale of penny sample jars.

The exhibition was formally opened by the Mayor, who made a characteristic speech in performing the ceremony. The bee he described as a perfect Socialist, because in gathering its honey it respected no man's flowers, and it took it back for the benefit of the other bees. That was Socialism in the dream. It was a perfect Socialist because it knew what to do with the work-shys and drones. Those that produced nothing were cleared out. They were of no use, and were not allowed to sap the vitality of the community.

Messrs. W. Herrod, of London, and A. G. Pugh, of Beeston, were the judges. The awards were:—

Appliances.—1st, Messrs. Thos. W. Harrison and Son.

Beginner's Outfit.—1st, Thos. W. Harrison and Son.

Sections of Honey (Open Class).—1st, J. Pearman, Derby; 2nd, W. Patchett, Cabourne, Lincs.

Extracted Honey (Open).—1st, A. Herring, Braunceweil; 2nd, S. Sanderson, West Wratting; 3rd, C. H. Marshall, Lincoln.

Interesting Exhibit in Beekeeping.—1st, Rev. F. S. F. Jannings, Warmsworth Rectory; 2nd, J. S. Baldry, Lincoln; 3rd, G. H. Steventon, Bisley.

Honey Trophies.—1st, G. H. and T. S. Elliott, Southwell; 2nd, G. Marshall, Norwell; 3rd, D. Marshall, Carrington.

Light Extracted Honey.—1st, W. H. Mellors, Norton; 2nd, W. Lee, Southwell; 3rd, G. Marshall; 4th, D. Marshall.

Dark Extracted Honey.—1st, G. Marshall; 2nd, H. Merryweather, Southwell; 3rd, G. F. Stubbs.

Heather Honey.—1st, J. North, Sutton; 2nd, W. G. Lucas, Southwell.

Single Section of Comb Honey.—1st, J. North, Sutton; 2nd, D. Marshall; 3rd, G. Marshall; 4th, D. Maher, Cropwell.

Granulated Honey.—1st, G. H. and T. S. Elliott; 2nd, J. Woods, Warsop; 3rd, J. T. Duckmanton.

Shallow Frames.—1st, Mrs. Fidler, Hucknall; 2nd, J. Woods, Warsop; 3rd, J. North.

Amateur.—1st, J. Parkins, Sutton; 2nd, Mrs. Fidler.

Observatory Hive of Bees.—1st, D. Marshall; 2nd, G. F. Stubbs; 3rd, G. Marshall; 4th, Mrs. Copping, Beeston.

Honey Cake.—1st, Mrs. Riley, Beeston; 2nd, J. North; 3rd, Mrs. Copping.

Beeswax.—1st, W. Darrington, Eastwood; 2nd, W. G. Lucas; 3rd, Geo. F. Stubbs.—*Communicated.*

NORTHUMBERLAND AND DURHAM B.K.A.

The combined show of the Northumberland B.K.A. and Durham B.K.A., held at Newcastle-on-Tyne, September 2nd, 3rd, and 4th, in conjunction with the Durham, Northumberland, and Newcastle Botanical and Horticultural Society, was a great success from an educational point of view, and aroused a large amount of interest.

The Northumberland B.K.A. has so lately started, that most of the entries came from the north of the county, the old Cheviot and Tweed Borders members playing up well, and, in spite of the distance, sending a large number of exhibits. Mr. Joseph Price and Mr. J. Kidd were the judges. Mr. Price also gave lectures and demonstrations, which drew large audiences, and from the number of questions asked it was evident that many were interested in what they saw and heard.

Four candidates for the preliminary examination (third class expert) presented themselves, and all passed. The awards were as follows:—

OPEN CLASSES.

Observatory Hive, with Queen and Bees.—1st, J. S. Smith.

Observatory Hive of One or More Combs, with Queen and Bees.—1st, G. G. Robson.

Super of Heather Honey.—1st, John Soulsby.

Six 1-lb. Sections of Honey.—1st, N. Beveridge; 2nd, R. Robson; 3rd, Wm. Dixon.

Six 1-lb. Sections of Heather Honey.—1st, N. Beveridge; 2nd, R. Robson; 3rd, G. G. Robson.

Six 1-lb. Jars of Extracted Honey.—1st, J. J. Harding; 2nd, Jas. Gladding; 3rd, G. Moir.

Single 1-lb. Section.—1st, R. Robson; 2nd, W. Wallace; 3rd, J. Robson.

Single 1-lb. Jar of Extracted Honey.—1st, H. Harmer; 2nd, J. J. Harding; 3rd, Jas. Gladding.

MEMBERS' CLASSES.

Six 1-lb. Sections other than Heather.—1st, N. Beveridge; 2nd, R. Robson; 3rd, G. G. Robson.

Three 1-lb. Heather Sections.—1st, J. Robson; 2nd, N. Beveridge; 3rd, Mrs. H. G. Stobart.

Six 1-lb. Jars of Extracted Honey.—1st, H. Harmer; 2nd, R. Robson; 3rd, Jas. Gladding.

Six 1-lb. Jars of (Medium) Extracted Honey.—1st, N. Beveridge; 2nd, R. Robson; 3rd, G. G. Robson.

1-lb. Section, any shape or size.—1st, J. W. Mills; 2nd, R. Robson; 3rd, W. Wallace.

Beeswax.—1st, Wm. Bowes; 2nd, Jas. Gladding; 3rd, R. Robson.

Mr. W. Dixon, of Leeds, exhibited a very fine trophy and many other interesting features on a stall of his own.

The whole show should boom the craft in the North. It was to be regretted that the classes for 5in. by 4in. sections did not fill, as it would have been interesting to have compared them side by side with the 4¾in. by 4¼in.—F. SITWELL, Hon. Sec., Northumberland B.K.A.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

A BUBBLE BURST.

[8814] In the issue of JOURNAL, May 29th, readers may remember I endeavoured to draw a word picture of an "ideal system" of apiculture—which is still my idol. I wholly dissent, however, from the extravagant and far-fetched deductions some have drawn from my words. My critics have been "seeing visions and dreaming dreams." One considers I am "apparently" agin' the Government. I would advise him to wait and see. Another welcomes me effusively as a convert, and a "member of our ranks." My reply is that he will never see me a member of such a "Falstaffian" army. A third critic (whose past history has made him very familiar with the type) has drawn an execruciating picture of "D. M. M." as an outcast, and a "martyr"; while, unkindest cut of all, he numbers me "among the prophets!" The wish must have been father to the thought. Why should I join the "ranks" of those now inhabiting the Cave Adullam? I am "not in debt, not in distress, and not (even) *discontented.*"

I venture to assert that the B.B.K.A. has no more loyal supporter "in their ranks" than I am. Although I do not consider them or their works perfection, yet I honestly believe that the Council have the good of bee-keeping at heart as sincerely as any other twenty-one men or women in our islands. At first hand, I know they are working strenuously for its betterment, and that the members are anxious to "move with the times," and all along the line—by evolution, not by revolution. They deserve the thanks and commendation of all who have the true interests of apiculture at heart for giving their gratuitous services, their valuable time, and no small expenditure of cash purely for the good of the craft, thus emulating the men of the olden time, "when none were for a party, but all were for the State."—D. M. MACDONALD.

HONEY JUDGING.

[8815] I heartily endorse Mr. Lawton's letter (page 374) on the qualification of those who aspire to the position of honey judges.

At small shows, particularly, very few are capable of performing their duties in a satisfactory manner—and how can they when many do not even keep bees? Bee-keepers are generally amongst the mildest of men, but several times have I seen them protesting with disgust at the result of the judge's awards. At one show a boy and girl were appointed, at another a grocer, while at others the judges of vegetables poultry, and eggs have been asked to adjudicate. Surely bee-keepers are far more capable than these persons, and if they were qualified in the manner suggested there would be far more satisfaction amongst exhibitors than there is at present.

Then the various Associations might

supply the flower show committees with the name of a suitable judge for their honey classes, instead of leaving these worthy bodies to search out their own. How is it that honey awarded first in open competition in other parts of the country gets nothing at the local show? There is absolutely no accounting for the tastes of some judges. They cannot appreciate good honey when they see it, to pass over a sample of light and thick clover honey and give the prize to a muddy sample our Cheltenham grocers would refuse to purchase.

I think it a suitable time to discuss the matter, so that exhibitors shall have the "fair play" they ask for.—A. H. Bowen, Cheltenham.

[8816] I read with interest the article on the above subject in the issue of the Journal for September 18th, and certainly agree with what your correspondent says, but he only mentions the judging of extracted honey, and the methods of some judges; but may I also add that it would be a good thing (especially at the big shows) if there was a separate class for sainfoin section honey? I have noticed many times, that no matter how well filled and good a clover section may be, the sainfoin generally takes the premier award.

Many bee-keepers, like myself, cannot produce anything but white capped sections, and I contend that it is a matter that might be considered by the B.B.K.A. and many of the large show committees. I should like your opinion. With apologies for troubling you.—Thos. A. Denison.

[There is a great deal in what our correspondent says, and we commend his remarks to the organisers of big shows. At the same time we anticipate there would be a great deal of trouble at first through people entering in the wrong classes.—Eds.]

[8817] On looking through this week's Journal, I noticed two correspondents raise points regarding the judging of honey.

The competition suggested by Mr. J. S. Lawton (8810, on page 374) might be interesting, but would not solve the difficulty. An exhibitor naturally thinks his exhibit the best. To my mind a good judge must have had practical experience as an exhibitor, and his character must be absolutely above suspicion. Such a man would appreciate the efforts of the exhibitor, and give points for general appearance as well as flavour, &c.

With regard to judging sections (8819, page 376), if the general public did not see exhibitors handle their exhibits, I believe no one else would touch them. The classes should be arranged so that sections may be viewed from both sides, whether in twelve, six, or three section lots, and so that the judge is not obliged to carry one section from a class to the light in order to judge of the colour, which generally means that only one section is judged. Had your correspondent, R. Ellis, glazed his sections (not put them in section cases) it would have kept the public from tasting. If necessary for the judge to taste, the glass can be tied on with string after the judging is over. Some judges are better than others, according to the different views of exhibitors. Although I have attended numerous shows I have been disappointed to observe judges do not give points for get-up when exhibitors glaze the sections themselves, instead of using the manufacturer's section case. The exhibits should be the entire work of the bee and the bee-keeper. An exhibitor is not worthy of a prize who cannot prepare his product for market, and has to depend on other people's aid to make it look attractive.—Exhibitor.

KILLING BEES—AND OTHER TOPICS.

[8818] I am sorry that I appear to have inadvertently given the impression that the worthy Junior Editor's article on this subject was useless and unnecessary. That was far from my intention. It is very necessary to destroy bees at times, and since modern bee books are silent on the subject, such an article, lucid and practical, like everything from the same pen, must be welcome to all. If I confess to a mild attempt to pull the author's leg, shall I be for ever discredited as a serious writer? By the way, may I point out that my challenge on behalf of "Curites" still remains unaccepted.

Queens for Increase.—Here again, I must own to having originally intended to call attention in a gentle manner to what I thought was a little case of "involvement" in Mr. Macdonald's directions, but his reply in the current issue makes me wonder whether, after all, my inquiry was not that of an honest ignoramus. Do I understand Mr. Macdonald to mean that the queenless part, only separated from its fellows below by excluder, which is really no separation at all, will therefore raise queens? If so, it is news to me, Honest Injun!

Slow Feeders.—I have never before heard anyone complain of these. Had the cork linings to Mr. Campbell's bottles come off? The rapid feeder with a float has more than once given me trouble, on account of the float sinking to the bottom,

a mass of struggling bees in all stages of "drowndedness" being the unhappy result.

Skeps. Mr. Crawshaw puts it very nicely when he says the skep is fool-proof. I have recently been seeing some bar-frame hives in which the combs were immovable, owing to no foundation having been used. Picture the horror with which one gazes after the quilts are lifted. On the same hive were foundationless sections, each batch of six having a long, beautifully built comb running through the lot. In despair I advised the owner, who was hard to convince, to content himself with putting an upside down empty box on next year.

The fact is, the enthusiastic bee-keeper finds it hard to believe that there are others with less intelligence than himself. I remember persuading someone to try a "Primus" stove, alleging its vast superiority over the ordinary oil-stove. The unholy state to which it reduced the maid-of-all-work induced a speedy return to the smoky, heatless, smelly, old-fashioned, but more or less fool-proof one. —HERBERT MACE.

SLOW FEEDERS.

[8819] In BEE JOURNAL for September 18th, H. Campbell (page 373) asks for experiences of *slow* feeders. In *Gleanings* for February 15th, 1913, pages 119-121 there is a description, with illustrations, of Mr. Jay Smith's "Perfect Feeder." From this I have had two hives constructed by a local joiner. This feeder holds a quart of syrup, and you need not put in more than you wish to give at a time for "slow" feeding. It has one great advantage. The syrup is poured into the feeder from the back of the hive, and there is no disturbance to the bees, or loss of heat from opening the cover of the hive. When feeding for the autumn, you can feed twice a day for four or five days—or more if necessary. There is a bee space over the feeder, so no bees are crushed when frames are handled. There being no metal about this feeder, and it being in the floor of the hive, the syrup cannot run down over the frames!

As a rapid feeder, I find it saves a lot of trouble and time. Mr. Jay Smith writes that he has frequently fed 100 colonies in fifteen minutes.—J. M. WEDDERBURN MAXWELL (Major).

IS THERE A RELIABLE SLOW FEEDER?

[8820] Referring to Mr. Campbell's communication about slow feeders on page 373 of last week's JOURNAL, I think that, generally speaking, his remarks are justified.

There is, however, a feeder recently introduced by Messrs. Lee and Son called Morgan's Feeder, which might perhaps cause him to modify his opinion. In this feeder (a combination one) the syrup cannot possibly get into the hive. There are regulating screws, by means of which syrup may be fed to bees as slowly as one thinks fit. The wear and tear of these screws only seems to make a still better fit with the countersunk holes into which their conical ends go.

With regard to tin as a material which invariably rusts sooner or later, I entirely agree; but then, so will any metal exposed to air or moisture—the only difference being in the colour of the oxide produced.

I find that beeswax melted to run over the feeder, which should have been previously heated, does away with the rust trouble almost entirely.

It would give me pleasure to lend Mr. Campbell one of the above feeders, so that he may thoroughly test it.—VERITAS, Middlesex.

LYSOL FOR FOUL BROOD.

[8821] In reply to Mr. Crawshaw's remarks *re* "Lysol," p. 376, September 18th, I should like to say that it is not necessary, in my opinion, to remove any portion of the hive during treatment. It seems desirable to put the drug as low as possible in the hive, and many ways might be suggested. One method would be to take a lath the depth of the hive and saturate the lower part of it (about three inches) in the Lysol, and allow the top part to be within reach, so as to examine it from time to time, and resaturate it. If the lath is about 1in. wide and $\frac{1}{8}$in. thick, there is always room to insert such a piece of wood: it should be *absorbent* and not resinous. Bundles of laths cut, and not split, used now by plasterers, are sold cheaply; they are useful things to keep in stock for several purposes, one being to make labels for seeds. If it is required to put the Lysol *lower* than I suggest, it can be done by making a foot to the lath, taking care to put it on edge instead of flat, and at right angles to long piece.—F. V. HADLOW.

BEES WORKING THROUGH SUPER CLEARER.

[8822] I noticed in the "B.B.J." of a week or two ago the statement that bees would not store honey in supers when their only access is through the hole in the super-clearer. This year I took off the supers as the honey-flow appeared to be over, but when I put the shallow frames back to be cleaned out the weather became bright, and I found in one hive that although the bees had cleared out

the honey left by the extractor in the combs, they had started to store fresh honey in some of the frames, and one frame was, after two days, nearly full with a few cells capped over, while two other frames were partly full.—HAROLD DEANE.

ONE WORD FOR THE SKEP.

[8823] There is one benefit derived from the old skep system of keeping bees that I have never seen mentioned, but which is, I think, a real one. It has often been pointed out that the system resulted in the survival of the unfit, because the cottager would destroy the heaviest hives and therefore the best bees, and leave the worse ones to continue the race. It is a result that cuts both ways. If the cottager takes his forty-pound hives and leaves ten- and twenty-pounders to stand the winter, he establishes a competition in thrift between the latter, and the skep that can come through a winter on 10lb. or 12lb. of honey, build up early and cast a big swarm has qualities of good value to any bee-keeper. I have only worked with bees obtained from an old-established skep garden, and have always been astonished at the thrift of these bees. Making careful estimate of the stores that should have been laid up, I am invariably surprised to find them amply exceeded, and for my bees I am sure the 30lb. of stores advised for a winter supply is a very generous allowance.

I think that many skeps come through the winter rather handsomely on only 12lb. of stores. No doubt they would do better with more, but the hardiness and capacity for economy given to bees by the old skep system is a distinct advantage. In fact, the weakness of the newer system is that it does not seem to find room for education in these important qualities.—G. G. DESMOND, Sheepscombe, Gloucestershire.

BRIEF REPORTS.

[Now that the honey season is over, and in many cases the crop disposed of, the Editors will be glad to have brief reports from readers, so that we may gauge the success or otherwise of the season in different parts of the country.]

Bees have done remarkably well in this district. I have taken as many as 100 good sections from one hive. I might say our principal source is white clover, there is no heather in this part of the county.—E. C., Grampound Road.

I am sorry to say it has not been a good season in this part of Kent, owing to the cold mornings and evenings. I started the season with three colonies. Increased to nine, from which my surplus is 77lb. all told: not much from so many hives is it, as they were all strong stocks? We have not any disease in this district, I am glad to say.—Elham, Kent.

Although nearly all bees in this village are dead from "Isle of Wight" disease, I think that mine are well, and my two colonies of the spring have developed into six fairly strong stocks, and have given me 3cwt. and 20lbs. of honey. The Association expert thinks I have done well. The above might be interesting to readers of your excellent JOURNAL. 1½cwt. of honey and two additional stocks does not seem a bad result from one hive. Most of the honey has been in the hives all the summer and is granulating rapidly.—H. C., Essex.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

The Man.—Wesley Forster is contributing a series of sketches of "Beemen I have known," to *Gleanings*, and in the opening chapter he says: "One cannot fully understand the principles of bee-keeping which enter into the success of a bee-keeper, unless he knows something about the man mentally, morally, and physically. The man is the chief factor to be considered. If one can see the actual man he can see why and how he raises good crops of honey. So I shall consider that I am treating of a man's personality when I tell of his apiary auto, honey-house, smoker, or hive tool." It would help readers to appreciate these sketches if each were accompanied by the counter-presentment of the man dealt with, and I hope these will be supplied in future numbers.

Mating Queens in Switzerland.—Dr. Bruennich lauds these Swiss queens, on page 493 of *Gleanings*, and tells us they have learned that the black race is the best for their conditions. Starting with this at first as a theory, they have proved it a fact. They selected the very purest natives they could find, and determined to keep their bees pure. By special mating-boxes, isolated mating stations, and the selection of pure bred virgins and pure drones, they have succeeded in rearing queens perfectly suited to their climate and surroundings. I must give the mode of selection in his own words: "I demand of the stock for breeding that its queen shall be three years old, her colony during those years being ahead of the others. The brood must be regular and compact, and this must be true of the garland of pollen. I do not like wax bridges nor ill-tempered bees. I demand that her sisters and ancestors have the same fine qualities, and I want the colour of the bees to be uniformly of a dark appearance." We are

told by another writer, Mr. Heberle, that these Swiss breeders are not satisfied with just rearing queens from selected colonies, but they require these queens to be mated with drones from the choicest. This their thirty-three mating stations enable them to accomplish. They have an excellent organisation of bee-keepers, and they hold a *breeders' conference* each year, at which for two days the best methods of queen-rearing are thoroughly discussed, and experiences are exchanged, while lectures and demonstrations make the gathering very interesting and instructive.

Canada.—Bee-keepers will learn with regret that Mr. William McEvoy is lost to Canadian bee-keeping. He was well known over the American continent, and even in this country, as a poineer in the extermination of foul brood, and his method, in a modified form, is very extensively practised. He was a large producer of honey, and a prominent man in Canadian beedom.

The *Canadian Bee Journal* has to be added to the number of American bee newspapers which have already collapsed. True, it is not quite dead being *absorbed* by the *Cañadian Horticulturist*. This paper now has a special department devoted to bees and bee-keeping. Let us hope that in this form it will do better work for bee-keepers than its limited circulation has permitted it in the past.

Introducing with Smoke.—Mr. Arthur C. Miller some time ago wrote strongly in favour of introducing queens by smoke. *Gleanings* records that sincere recommendation has been given by two of their operators to the practice. They have tried smoking in queens under the most difficult conditions, and found it successful in every instance, and one of them writes that he has found no other system to equal this one. A strong colony that had baffled attempts at introduction by the cage plan accepted a queen smoked in at the entrance. Colonies that had been queenless thirty days made no demur to a queen thus introduced, and even colonies afflicted with fertile workers did not enter a protest, but adopted the new mother as if she were one of themselves.

Mr. Miller advises as follows:—Contract entrance to about an inch, give three or four puffs of thick, white smoke, then close entrance, leaving it thus for fifteen or twenty seconds. Run queen in then, re-closing the entrance after giving another puff of smoke; then, after about ten minutes, partly open slides and allow bees to ventilate and quiet down. The full entrance is not given for an hour or more, or even until the next day. The queen may be picked direct from a comb, or she may be run direct from a cage in which she has travelled through the mails. The result is the same. Experimenters might kindly report results.

Strong Colonies.—I have recently drawn attention to several large takes from single hives in Australia. Here is how some of them succeed in piling up their surplus takes:—"One cannot secure a strong enough working force from one set of brood-combs. In the apiaries giving the highest yield, hives are tiered up three or four storeys high without a queen-excluder. In January, one four-storey hive gave: January 7th, 90lbs.; January 17th, 120lbs.; January 24th, 90lbs.; January 31st, 90lbs; and it is still going strong. This total of 390lbs. for one month could not possibly have been gathered by the bees from one single brood-chamber." This was written by Mr. Beuhne, and his eight best hives for the period from January 1st to February 14th yielded 600lbs., 600lbs., 480lbs., 600lbs., 540lbs., 540lbs., 540lbs., and 480lbs., or a total of 4,380lbs. of surplus honey in forty-five days. Another apiary gave an average of 480lbs. per colony for 200 colonies.

Carniolans.—A bee-keeper who tried this race for the first time this season was keenly enthusiastic in their praise when I met him recently. Here is what they have to say of them at the Root yard: "At one Carniolan apiary, bees are violating every known rule of swarming. They will even continue swarming after the honey season has stopped; they will swarm without a queen. Even when clipping is practised a swarm will come out with a virgin and make for the top of a tree. An Ontario bee-keeper wrote a few days ago that he was nearly worn out, and the swarms were getting away from him." This is the old story in regard to this race.

ESSEX B.K.A.

LECTURE AT CHELMSFORD.

The above Association held a conference at the East Anglian Institute of Agriculture, Chelmsford, on Monday, September 15th, when the chairman of the Association, Mr. W. A. Simkins, M.A., of Chigwell, presided, the subject for discussion being "Bee Associations and their Work." Mr. W. Herrod, F.E.S., secretary of the British B.K.A., was the principal speaker, and urged the local secretaries of the Association to have monthly meetings for discussion of bee questions in their respective districts during the winter months. These meetings could be arranged at members' houses, and non-members invited, and thus the work of the Association would be extended and the membership increased.

The secretary thanked Mr. Herrod for so valuable a suggestion, and expressed his willingness whenever possible to attend such meetings. Others present joined in the discussion, after which Mr. Herrod gave an admirable lantern lecture on "Bee Diseases; Their Detection and Treatment." This was very highly appreciated by those present. One of the audience asked at the conclusion of the lecture why Mr. Herrod had said nothing about his "Apicure." The lecturer pointed out that he was a "lecturer, not an advertising agent."

The chairman, in putting to the meeting the vote of thanks to Mr. Herrod, which was proposed by Mr. Malins Smith (the Principal of the East Anglian Institute), remarked that he had found nothing to compare with Apicure for keeping bees in health, and he attributed the continued bill of health in his apiary solely to its constant use.—G. S. ALDER, Hon. Sec.

BEE-KEEPING ON THE CINEMA.

Mr. J. C. Bee Mason will show his bee pictures at the Pavilion and Winter Gardens, Ramsgate, on October 6th, and during the week following. Readers in the Ramsgate district should make a point of seeing these beautiful representations of bee-life.

NEW ZEALAND HONEY.

From the reports of the Apiary Inspectors, the crop of honey in New Zealand appears to have been most excellent, both in regard to quantity and quality. In North Otago the crop is a record for the whole district. The National Federation of Bee-keepers' Associations, having taken the matter of export in hand, have made the first shipment of first-class honey under Government grading rules, consisting of eleven tons sent by two producers only. Like other produce exported under Government inspection, each package will bear the inspector's stamp and be marked showing quantity and quality, and this will be a guarantee of its genuineness.—*The Globe.*

Bee Shows to Come.

September 27th, at County Technical Buildings, Stafford. Under the management of Staffordshire Bee-keepers' Association. Exhibition of Honey, Bees, Beeswax and Cakes. Open to members of Staffs. B.K. Association only. Classes for Cottagers and Novices. Schedules from C. R. Forse, Trentham, Stoke-on-Trent.

October 21st to 24th, at the Agricultural Hall, London. Show of honey and bee produce, in connection with the British Dairy Farmers' Association. Numerous prizes for honey, &c. **Entries closed.**

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

J. V. THOMAS (Llansadwrn).—*Subjugating Bees.*—It will be much better for you to use the smoker. We have tried the appliance you name, and, like yourself, found it a failure. The fault is not yours.

S. H. J. (Chelmsford).—*Using Lysol.*—The writer of letter recommending this disinfectant has replied to another correspondent, and this answers the inquiry you made as to how to use it. See page 386.

CHAMBERS.—*South African Bees.*—The specimens you send are ordinary South African bees, which vary very much in appearance, even to there being apparently different kinds in one hive from the same mother.

Honey Samples.

A. E. S. (Cardigans).—No. 1 is a very nice light clover honey, but rather lacking in density. No. 2, a good sample of a heather blend.

W. E. C. (Worthing).—Your sample is unripe clover honey.

H. M. (Hambledon).—One word will describe all the points in your sample of very light-coloured clover honey, *i.e.*, excellent. It is well worth showing.

W. M. (Mansfield).—The honey is mainly from limes, but has an admixture of honey dew, which causes the dark appearance and has not improved the flavour.

W. ANDERSON (Stirlings).—The honey contains a very small quantity of honey dew, but not sufficient to spoil it for household purposes.

Y. B. (Haverhill).—We are glad the BEE JOURNAL has been so helpful to you. Regarding your samples, No. 1 is a light honey of good flavour, but poor in density. Worth 50s. per cwt. No. 2 is also a light-coloured honey, but good in density and flavour. It is worth 60s. per cwt.

Suspected Disease.

COSBY (Leicester).—We regret to have to confirm your suspicions. There is no

cure for "Isle of Wight" disease. Many thanks for your kind appreciation of our efforts on behalf of bee-keeping. It is the expression of such sentiments by readers which sweetens one's labour.

W. F. (Oxford).—The bees have "Isle of Wight" disease and had better be destroyed.

Novice (Yorkshire).—Both lots of bees show signs of "Isle of Wight" disease.

A. W. D. (Didsbury).—The bees were drowned in honey, and therefore could not be examined.

Special Prepaid Advertisements.

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ¼*in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

FOR SALE, 4 cwt. fine honey, 60s. per cwt.; also beeswax; sample, 2d.—W. A. CARVER, Castle Cary. v 28

FOR SALE, or exchange, new, healthy shallow combs; also bees and appliances; wanted, good bicycle; stamp reply.—No. 100, "B.B.J." Office, 23, Bedford-street, Strand, W.C. v 19

FIVE DOZEN HEATHER SECTIONS, well filled, unglazed; offers wanted.—Southview, Wolsingham, Durham. v 15

NOTED COTSWOLD HONEY, 8s. 9d. dozen, boxes free; sample, 2d.—BOWEN, Coronation, Cheltenham. v 17

SEVERAL SKEPS BEES, all strong, plenty winter stores, 1913 queens; several bar frame colonies, all heavy in winter stores, hives good, 1913 queens, owner must sell, no room; bar frame colonies, 23s.; skeps, 12s.; stamp reply.—J. HARRIS, Aberfeldy. v 20

WANTED, good quality sections, good price given and prompt cash.—PARTRIDGE, grocer, 174, South Ealing-road, Ealing, W. v 21

HONEY WANTED; sample, stating price and quantity.—WILLDEY, Water Orton, Birmingham. v 23

FOR SALE, seven strong, healthy stocks of bees, strong and nearly new hives, 26s. each.—MRS. GALE, The Bungalow, Kingston-lane, Southwick, Sussex. v 24

FINEST Berkshire light, well-ripened, extracted honey, 28lb. tins, 65s. cwt., f.o.r., cash with order; sample, 2d.—HARRY CROWTHER, Harwell, Steventon. v 25

FOR SALE, overstocked, three healthy stocks, with 1913 queens, on frames or with hives; particulars.—HART, Nether Garvock, Dunning, Perthshire. v 26

200 CWT. LIGHT CLOVER HONEY, in bulk or in tins, to suit customers, £3 per cwt., cash, on rail; samples free.—EDGAR CAFF, Hillcoose, Grampound-road, Cornwall. v 27

WANTED, an emasculated black Persian kitten.—Box 4, "B.B.J." Office, 23, Bedford-street, Strand, London, W.C. v 88

BEES FOR SALE, healthy stocks, from 16s., with 1913 queens; nucleus, 7s. 6d.—NORRIS, Chase Cross, Romford. v 16

FINE PERTHSHIRE HONEY, two 14lb. tins, 8s. 9d. each; one 28lb. tin, 17s. 6d.; sample, 3d.—W. FRASER, 5, Brown-street, Perth. v 33

TWO HIVES FOR SALE, used one season, canvas tops, good as new, 5s. each, on rail.—THOMAS, 41, Chapel-road, Abergavenny. v 34

WANTED, two healthy lots driven bees; exchange good red pair pedigree Belgian hares, ten months.—BRETT, Grove Cottage, Maybury, Woking. v 30

EXCHANGE, miscellaneous lantern slides (photo) for some on bees and bee-keeping.—176, Hainault-road, Leytonstone. v 32

WANTED, good clover honey, in exchange for seltzogine, cost 18s.; banjo, 30/-; Panama hat, 30/-; honey drum, 1 cwt., 10/-; lady's bicycle frame, oil cake breaker, all good; what offers? or sell cheap.—156, Moston-lane, Manchester. v 13

LIGHT EXTRACTED, 58s. per cwt.; sample, 2d., f.o.r.; or exchange for camera.—SIMCOX, 17, Victoria-road, Fallings Park, Wolverhampton. v 93

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

DRIVEN BEES, 1s. 3d. lb., with young fertile queens, healthy, boxes 6d., or returnable.—HANSON, 37, Westgate, Pickering. v 14

DRIVEN BEES, and young heather queens, heather sections, and honey, now ready; twenty strong stocks, standard hives, full of stores, 25s.; original Rymer honey press, 30s.; bees, 1s. 6d. lb., box, 6d.; queens, 2s. 6d.—T. HOOD, expert, Pickering. v 9

FOR SALE, honey, good quality, over 100 lb., screw top glass bottles of extracted clover honey; also 2½ dozen sections, and 1½ cwt. of honey in tins; what offers?—T. W. PHILLIMORE, Three Horse Shoes, Enford, Wilts. v 31

SECTIONS WANTED, any quantity, large or small.—Write, stating price, to BEECROFT NURSERIES, Worthing. v 29

AUTUMN FEEDING.—Use Bowen's established "I.O.W." cure, remarkably successful, 1s. 6d.—CORONATION, Cheltenham. v 18

5 CWT. EXCELLENT DEVONSHIRE HONEY for disposal; offers wanted.—A. SMALE, Clearbrook, Yelverton, Devon. v 22

HEALTHY DRIVEN BEES, free from "Isle of Wight" disease, in 4lb. lots, with a young queen, 1s. 6d. lb., boxes free and on rail; also young, healthy queens, at 2s. 6d. each, in introducing cage, and post free; cash with all orders.—R. BROWN and SON, Flora Apiary, Somersham, Hunts. v 6

1913 PURE FERTILIZED QUEENS.—Swiss, 5s.; Carniolans, 3s. 6d.; Italians, 3s. 6d.; safe arrival guaranteed, cash with order.—FREDERICK VOGT, 63, Beresford-road, Canonbury, London, N.

Editorial, Notices, &c.

NORTHANTS. B.K.A.

ANNUAL SHOW.

The annual show of honey, &c., in connection with the Northamptonshire Beekeepers' Association was, by kind permission of the Estates Committee, held in Abington Park, on September 4th, and attracted much attention, some excellent specimens being shown in the marquees. Mr. W. Herrod, F.E.S., was judge, and gave a demonstration in a special enclosure during the day. The awards were as follows:—

Twelve 1-lb. Sections.—1st (British Bee-keepers' Association silver medal), A. Hiscock, Lodington; 2nd, F. J. Holley, Wellingborough; 3rd, E. Marshman, Little Linford; 4th, James Adams, West Haddon.

Twelve 1-lb. Jars Extracted Light Honey.—1st, W. H. Chambers, Northampton; 2nd, A. Hiscock; 3rd, R. Allen, Tusmore; 4th, E. Thompson, Kettering; 5th, F. H. Ireson, Wellingborough; v.h.c., F. J. Holley; h.c., E. Marshman and C. Wells, Oxendon.

Six 1-lb. Jars Extracted Dark Honey.—1st, A. Hiscock; 2nd, H. Burdett, Desborough; 3rd, J. Pollard, Tingewick; h.c., H. Burdett.

Six 1-lb. Jars Granulated Honey.—1st, — Adams; 2nd, C. Wells; 3rd, J. H. Willmott, Stanwick; 3rd, h.c., J. Pollard.

Three Shallow Frames of Comb Honey.—1st, F. J. Holley; 2nd, Miss E. Scott, Tichmarsh; 3rd, F. H. Ireson; 4th, C. J. Burnett, Northampton.

Super of Honey.—1st, R. Brawn, Northampton; 2nd, J. Adams.

Beeswax.—1st, A. Hiscock; 2nd, F. H. Ireson; 3rd, H. Burdett; 4th, C. Wells; v.h.c., W. Allsopp, Barton Seagrave.

NOVICES' CLASSES.

Six Sections.—1st, W. Allsopp; 2nd, J. W. Bocock, Stony Stratford; 3rd, Miss E. Scott.

Six Jars Extracted Light Honey.—1st, J. H. Willmott; 2nd, W. Allsopp; 3rd, J. W. Bocock; v.h.c., Mrs. Sanders, Long Buckby; h.c., F. H. Ireson and W. H. Chambers.

Six Jars Extracted Dark Honey.—1st, Mrs. Sanders; 2nd, H. Dunmore, Lamport.

Three Sections and Three Jars Light Honey.—1st, Mrs. Hiscock; 2nd, Mrs. Sanders.

OPEN CLASSES.

Single Jar of Honey.—1st, W. Allsopp; 2nd, W. Patchett; 3rd, Mrs. Hiscock; 4th, R. Allen; 5th, A. C. Jackson, Clevedon; v.h.c., T. Denison, Stockton; h.c., F. J. Holley, W. Lilley, Glinton, Peterboro', A. Hiscock, and W. H. Chambers, Colwyn Road, Northampton.

Section.—1st, W. Patchett, Caistor, Lincs.; 2nd, T. A. Dennison, Stockton, Rugby; 3rd, R. Allen; 4th, A. Hiscock; v.h.c., W. H. Allard, Stockton, Rugby; h.c., S. Sanderson, West Wratting, Cambs, W. H. Chambers, and F. H. Ireson.

Cake (sweetened with honey).—1st, Mrs. Knight, Wellingborough; 2nd, Mrs. J. Shelton, Wollaston; 3rd, Mrs. Hefford, Kingsthorpe; equal 4th, Miss G. E. Burnett, Northampton, and Miss E. M. Burnett, Northampton.—R. HEFFORD, Hon. Sec.

AMONG THE BEES.

By D. M. Macdonald, Banff.

HIVE-STANDS.

Many and varied were the different types of hive-stands found all over the country in my earlier bee-keeping days. Some species of support was deemed necessary, but every bee-keeper seemed to be a law unto himself, and in many apiaries each hive had some provision differing from its fellows. The tendency, however, of recent years is wholly towards improvement, and in the direction of more uniformity—all leaning towards that type so well represented by the "W.B.C." stand, which, in my opinion, is all that can be desired in a hive support. We use stands in this country, not only to preserve and extend the existence of the hive, to assist in ventilating the interior, to save stooping and backache when manipulating, but also on æsthetic grounds, because we believe they add to the elegance of the bees' abodes and improve the whole aspect of the apiary. We are convinced, too, that in several ways they add to the comfort and well-being of the diligent toilers.

The height at which the floor and flightboard are placed may mean a good deal in securing the best results. If the hive bottom stands too near the ground we must almost inevitably have damp in the interior. Combs may be mildewed and deteriorated, the honey near the damp soil may absorb so much moisture that it may become sour and form bad food, and even the young brood in wet seasons may suffer from the evil effects of its proximity to the superabundant moisture in the soil lying too near the wood of the floor.

On the other hand, it is inadvisable to place the hive too far from the ground, because bees are then considerably inconvenienced. On a windy day the full force of a gale may buffet the workers unmercifully when they are returning heavily laden. Many are beaten to the ground, and, being chilled there, fail to

find an entrance into that haven of comfort, the hive interior. Perhaps from six inches up to double that height may be taken as the best distance from the ground level to the hive entrance. Sloping floor-boards will considerably lessen that height for the front of flight-board. I would like hive-stands of the type I favour to have a foundation of four bricks or half-bricks to rest on, laid perfectly level, and just flush with the lie of the soil, and I consider it an improvement to have two pieces of inch boards resting on the front and back pairs, so that the lower part of the feet may stand on them. When these begin to show signs of decay they should be renewed.

Many of the four-legged stands on the market are wanting in stability, as they have not a sufficient grip of the ground. If hives on these are placed on soft soil one or more of the legs are certain to sink, thus tilting the whole hive to one side, and at times endangering its equilibrium. This result is almost inevitable if the legs are "delicate," and unless they are fortified by being placed on a staple base, such as is secured by the bedding of the brick or half-brick in the soil.

After the regular hive-stands, I got most satisfaction from a simple *rest* for the feet to stand on. The bricks stood on the level ground, a three-inch board ran from back to front of the hive resting on them, then another similar board cut the breadth of the hive to lay over these at front and rear, and the hive resting on these boards will prove thoroughly efficient. I always placed a piece of thin slate at the back between the two pieces of wood in order that there would be that much of a tilt towards the front of the hive for shedding water from the flight-board and entrance. These stands are thoroughly solid. They rarely require readjustment, and they look quite neat and attractive, while they are cheap and easily set up.

This levelling and adjustment of the hive-stand before running in a swarm should be very carefully attended to. It should be placed perfectly level, or if there is any deviation it should be in the way of a gentle declination to the front, the tilt mentioned above, by means of which water may not find its way into the hive interior, but be carried off freely along the flight-board. As bees build their combs perpendicularly, it does not aid perfect comb formation if the hive is set down with a slant to one side. Perfectly built brood-combs, and later the best work in super chambers, will largely depend on how this first manipulation of a hive and its support is carried out. Therefore, it will be seen that such a trivial matter as a hive-stand appears to be is really an important affair.

"Made" hive-stands are not in such universal use in South Africa, Australia, or America as with us. "If they use stands at all, bee-keepers suit themselves to surroundings"; "Coal cinders six inches deep make an excellent dry stand"; "Two pieces of hard wood laid flat on the ground"; "Two lengths of scantling"; or "Two chunks of wood," are typical quotations. Some favour solid stands of concrete, with at times a combination of stand, floor and flight-"board" in one. While a number use independent stands for each hive, very many believe in two, three, or four stock stands. This system is not much followed in this country. Dr. Miller lays down two scantling boards flat on the ground, with a second pair lying at right angles, these latter being 32in. long to accommodate two hives. Messrs. Root express a preference for solid stands on legs large enough to permit of two, three, or four hives on one stand, allowing a general system of grouping. Dr. Lyon decides for four boards being nailed together, forming an oblong bottomless box on one of which each hive should rest, and Mrs. Comstock favours something of the same nature, but with the top boarded and extending out in front, thus forming a bottom-board and a flight-board as well as a stand. "Platform" stands, accommodating quite a number of hives on one foundation, are very popular in many places. My own preference is distinctly in favour of an independent stand for each hive.

THE DUTIES OF AN EXPERT ON TOUR OF INSPECTION.

Having reason to believe that a rather large proportion of the bee-keepers who aspire to be holders of B.B.K.A. certificates of proficiency have no clear idea of the manner in which an expert on tour should carry out his inspections, I have thought it worth while to put my own ideas on paper. Some years ago the B.B.K.A. did have notebooks for experts printed, and these contained some instructions, based, if I recollect aright, on a code that had been drawn up for the use of Devon B.B.K.A. experts. They did not, however, go into much detail, they were not much used, and I doubt if they are still in existence.

What I have written here is applicable to the present time, but I venture to hope that in the event of compulsory inspection coming into force the instructions given may still be useful. As to Forms A to D, mentioned below, I should imagine that if the demand were sufficient the Council of the B.B.K.A. might see fit to publish them or provide something equivalent.

Criticism of the present article will be welcome. A B.B.K.A. expert on tour of inspection must bear in mind that in the performance of his duties he may meet with prejudice or even opposition. These he must try to overcome with good humour and tact. Having regard to the time at his disposal he should readily give advice and information on bee-keeping matters, but he should not undertake serious operations, such as the re-arrangement of an apiary or the active treatment of diseased colonies. These should be left to the owner himself, who should be advised to secure if necessary the assistance of a local expert.

The touring expert should encourage the owner of the apiary or his representative to join in the inspection, or, if the latter prefers it, to do all the manipulation under his personal superintendence. There should be no surprise visits. In every case due notice of the day and hour of inspection should have been given by the secretary of the Association, or by the expert himself if so arranged, and if possible the written approval of the owner obtained. In every possible way his convenience should be consulted.

The expert should carry with him as outfit at least one set of washing overalls and two pairs of gauntlets, a smoker with cartridges that can be depended on, and matches, some spraying device, two or three light carbolised cloths, some good disinfectant, such as Izol or Soluble Phenyl, and a vessel in which to dilute it. Water, it may be presumed, will always be obtainable, but the expert should count on nothing else. Perchloride of mercury, better known as corrosive sublimate, in lozenges, is a convenient and effective germ-killer, but being a very powerful irritant it needs much care in use. A small bottle of pure or methylated spirits and some wool are necessary for removing propolis from the fingers: the pellet of wool, when done with, will speedily disappear on the application of a lighted match. Carbolic soap and a nail brush will complete the personal outfit. It is advisable to have the liquids put up in screw-topped metal bottles, and to carry the whole outfit in a waterproof case or covering.

The expert should have with him a pocket book with ruled leaves, in which to jot down during his inspection such notes as may be necessary for present use, and for the refreshment of his memory when making his final report to the authority employing him. It would be a great advantage if he were supplied with four printed leaflets (best, perhaps, in a book with narrow counterfoils), (A) for treating quite mild cases of foul brood, (B) for serious cases where destruction is not imperative, (C) for the proper destruction of a badly-diseased colony, (D) for dealing with the "Isle of Wight" disease. Each of these leaflets should contain warnings as to the great danger incurred by exposing in any way to the visits of stray bees the contents of an infected hive, either when occupied or after the destruction of the colony, or by allowing them access to honey from such a hive which has been retained for the owner's purposes. On arrival, the expert must first make his business known by card or otherwise. On reaching the apiary he should if possible ascertain the owner's opinion as to the health and condition of the various colonies, and agree with him to visit the suspicious hives last. Failing trustworthy information, he must use his own judgment. It is possible sometimes to detect foul brood externally, by smell or by the appearance and behaviour of the bees. The healthiest looking hives should be tackled first.

It is a good plan to number in pencil each hive successively as they are examined, so as to ensure accuracy when making notes.

Whilst manipulating, the expert must constantly bear in mind that his every action should be part of an object lesson, and especially as regards his precautions against the possibility of spreading infectious disease. All excitement must be avoided as leading to robbing, and the contents of hives must be exposed as little as possible. In handling all frames only the tips of the thumb and two forefingers of each hand should be used, and on no account should any portion of a frame be allowed to touch the person of the operator. The further the frame can be held from his body the better.

As long as no signs of disease are detected all should be plain sailing. If on opening a hive or lifting a frame there is reason for suspicion the owner, if present, should be informed of it and the hive at once be closed down. If a frame has been handled, the operator should clean and disinfect his hands and spray or perhaps change his gauntlets.

When it becomes necessary to further examine a doubtful hive, or one known to be diseased, steps should be taken to prevent the visits of bees from other hives. This depends principally on the season. It will probably be best to keep the other hives closed if of the Claustral type, or in the case of ordinary hives to close the entrances with grass or other herbage loosely packed. This will keep the bees in the hives at home, and also take up the attention of those returning to their hives.

Should the expert make use of any piece of wood, such as a match, for probing doubtful cells, it must be either burned or deeply buried. Any instrument used must be carefully disinfected.

As regards the advice to be given for the treatment of diseased colonies, the expert by the end of his visit should have been able to form an opinion as to the owner's capacity, and whether he is likely to carry out curative treatment with success. Considering the facility with which healthy stock can be increased, the dangers of foul brood, and the almost unbearable nuisance of having it present in one's apiary, it is not easy to err on the side of severity when treating a case. On the other hand, when the owner is evidently skilful and energetic, and recognises the dangers of the situation, he may well be left in the first place to his own devices, even if the methods proposed should be unusual, or should even appear undesirable. In this case, however, a second visit of inspection at an early date should be arranged for, and on no account should the arrangement be allowed to fall through.

As regards dealing with cases of disease, the writer of this article is opposed to any treatment that leaves a colony in the hive where foul brood has been detected, even if apparently in the earliest stage. His experience has also convinced him that it is far safer to deprive the bees of all their combs, whether infected or apparently sound. He has not much belief in the virtues of spraying, or in the certainty of effecting a permanent cure by means of drugs alone. His (A) treatment would be as follows:—

Towards dusk drive the bees into a skep, and at once start feeding slowly with medicated syrup, to be continued for a week. Then turn the bees on to frames with foundation in a new hive, or in the old one thoroughly disinfected, changing the locality, if not very inconvenient, and feed with medicated syrup until the colony is established. A new queen and a frame of hatching brood from an undoubtedly healthy hive will be of advantage.

If the old locality must still be used it is most important that the surrounding ground should be disinfected. If possible it should be dug up and the top spit carefully buried. If the surface is gravel it should be swept, well watered with a strong disinfectant, and after a short interval be raked and watered again. Any loose débris should be burned after sweeping. In every case a skep which has been used as a temporary abode for diseased bees must be burned as soon as vacated.

Treatment (B): Towards dusk drive the bees into a skep having its top hole covered with wire cloth or strong cheese-cloth on wire support. If two or three colonies need treatment unite them in the same skep. Have ready a flat board for the skep to rest upon, and on this place quite flat a piece of coarse strong cheese-cloth, some few inches wider all round than the base of the skep. On the cloth place two frame bars or similar pieces of wood, and when the driving is finished place the skep upon them base downwards. The ventilation thus provided will keep the skep cool, and all the bees should soon have clustered inside. Now lift up the skep gently, remove the bars, place the skep upon the cloth, fasten the cloth securely with cord around the base of the skep, and replace the latter upon the two bars. In this condition the bees are to remain undisturbed and protected from sunshine for forty-eight hours. When the fasting period is over remove the skep while still on its board to a fresh locality, where a stand must be ready for it. Undo the cord, raise the skep gently, and place it on the stand with the usual flight-hole available, and give same evening a bottle or other feeder with warm medicated syrup. Burn or bury the dead bees found on the piece of cheese-cloth, and either burn or thoroughly disinfect the cloth and the board on which it rested. Continue feeding until a week has passed, then turn the bees into a fresh hive, and treat as in (A).

Treatment (C): Colonies should be destroyed by cyanide of potassium, as set forth in "Helpful Hints to Novices," "B.B.J.," Vol. XLI., N.S., p. 322, or by a table-spoonful of bisulphide of carbon used in the same manner. The latter drug is poisonous also, but not nearly so fatal to human beings.

Treatment (D): Up to the present moment there is no certain or, indeed, very promising cure for *microsporidiosis*. Having regard to the cause and nature of this disease, the writer feels inclined to recommend treatment (B) with full starvation period, and that any drug preferred, such for instance as sulphate of quinine, be used for medication.

Before leaving the apiary the expert should hand to the owner such printed forms or other literature as bear on his case, and make sure that he understands them. Then, having carefully disinfected his person, clothing and appliances as may be necessary, he should glance through his notes and make good any deficiencies. This done he may proceed on his travels.—H. J. O. Walker, Lt.-Col., Leeford, Budleigh-Salterton, 26th Sept., 1913.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

KEEPING THE WASPS OUT.

[8824] In this great year of wasps it has been hard to preserve our bees from their much stronger and more active foe. With a weak lot, the mere narrowed entrance is of little use, and often ends with a great loss of bees if not a clean rob-out. A late and very weak east I have guarded in this way:—Take a strip of $\frac{3}{8}$in. wood, say 7in. long, and tack to it a wider strip of $\frac{1}{4}$in., so that it projects about $\frac{5}{8}$in. Narrow the entrance to a bee-space or rather more, and fix these joined strips of wood on the alighting-board, so that they make a tube running at right-angles to the entrance, which is in the middle of it. If you like you can, of course, close one entrance of the tube, but I have kept them both open. It gives the bees more freedom, and I can almost say that not a single wasp or robber bee gets past the guards in this bewildering and easily defended passage. I expect, indeed, that the fact that the portico has daylight at both ends makes it more puzzling than it would be if one of them was closed.—G. G. Desmond, Sheepscombe, Gloucestershire.

SUCCESSFUL SKEPPISTS.

[8825] I was pleased to see in last week's Bee Journal (page 387) a good word for the skep, although I do not work any skeps myself, having kept bees on the most approved principles the last thirty-five years, and I know the advantages of the frame hive. I have, however, just returned from a tour in Cornwall, and came across one or two beekeepers of the old school who seem quite unable to work frame hives (they had them there empty), but who are very successful with their skeps. One near Truro had taken 40lb. from several of his skeps, and another (an old lady) not far from the Lizard, who had tried the frame hive, but could not manage it, had a splendid apiary of eighteen skeps all neatly covered with straw hackles. She said they had done well, and boasted that she was never troubled with foul brood or any other disease. It was a sight worth seeing, her small garden with the skeps all round it. I am pleased to say every bee man I spoke to said he had had a good season, and I am sorry I cannot say the same for this part of North Wales. The clover and limes bloomed profusely, but owing to the cold nights there seemed no honey in the flowers. I am glad, however, to see the reports of the season's "takes" in other districts. Having been a reader of the Journal since its commencement, I still take pleasure in its pages. F. Bull, Ruthin.

SLOW FEEDERS.

[8826] Will you permit me to offer my thanks, through the medium of your columns, to Major Wedderburn Maxwell and "Veritas"? I will study the number of *Gleanings* indicated by the former—though I confess that the idea of having to go in for a new lot of hives somewhat alarms me!

While deeply conscious of "Veritas's" generosity, I will not so far encroach on it as to put him to the trouble of lending me a "Morgan's" feeder. Its description was tucked away out of sight in Messrs. Lees's list, and so I overlooked it: but now that my attention has been drawn to it I propose to get one myself. I trust it will prove as satisfactory as he describes: but I must own that, having once tried another sort that involved the use of screws, I shall require some convincing (by experiment) that he did not "draw a lucky number." It occurs to me as possible that one example out of every thousand manufactured might prove good, while the rest are mere trash. However, we shall see.

I should like to add a word on the subject of the use of beeswax as a preventive of rust. My inclination is to supply the syrup *hot* (and not merely warm); and this, of course, makes the use of wax a doubtful benefit. Is there any reason why pitch should not be substituted for the wax? If not, may I recommend the idea to the dealers? In any case, I trust this correspondence will have the effect of stimulating them to fresh endeavours towards perfection.

May I finally suggest to Mr. Mace that the probable reason why he has not before heard complaints such as mine is that the majority of the human race is absurdly long-suffering? My experience is that men will sit down patiently under the most outrageous assaults on their comfort. I have done it myself for eight years! The worm has turned at last—that is all! The cork linings of my bottles were all right. What I maintain is that the whole principle of the bottle-feeder is worthy of the inventive faculty of a Neolithic savage.—H. Campbell, Norfolk.

A HOME-MADE SLOW FEEDER.

[8827] In the issue of 18th inst. (page 373) your correspondent H. Campbell deplores the lack of a good slow feeder.

My experience with the greater number of feeders on the market has been very similar to his own, although I cannot say I have tried all kinds. There are several quite good feeders amongst them, and others with very grave faults; but now for many years I have put them all on one side for a very simple one of my own design—and yet not my own, but only the manner in which I use it.

The feeder is so simple that I almost refrain from troubling you with a description, and it is only that in my experience it is of so great an advantage to the bees that I venture to describe it, hoping that others—Mr. Campbell amongst them—may find it as useful as I have done.

To begin with, it is a bottle feeder, convertible at will from a slow to a rapid feeder. There is no metal about it to rust, and if used properly it cannot possibly get out of order or go wrong in any way.

I use a stage 12in. long and 6in. wide, made of pine ½in. thick, having a fillet of the same wood ⅜in. thick tacked around its underside to form the bee-way. This stage has 3 holes cut through it of a diameter of 2½in. and at a distance of 4½in. from the centre to the centre of each hole. These holes when not in use are covered with 4in. squares of glass.

For rapid feeding I invert over each hole a quart bottle—an empty jam or marmalade bottle—of syrup, with nothing between it and the bees save a piece of open cheese cloth tied round the bottle. The stage is placed above the quilt across the frames, and so each bottle of syrup is as near as possible to where the bees will store it in the combs. Instead of the usual small feed-hole in the quilt I cut in it a slot about 10in. long and 3in. wide before placing the stage upon it, thereby giving the bees a direct way from the bottles to every comb in the hive.

When using it as a slow feeder I have one bottle only in use, placing this over the cluster of bees, but—and this is important—instead of using cheese cloth only between the syrup and the bees, I first place over the hole in the stage a piece of slate (ordinary roofing slate) 4in. square, having in its central part 2 holes of not more than ½in. diameter, about ½in. apart, and made slightly larger on the under side. This enables two bees only to feed at any one time.

I do not claim that this is a labour-saving device to the apiarist, but it possesses so many points of advantage to the bees that I venture to give it, amongst them being:—

1st. The bees can feed in all weathers without leaving the warmest part of the hive to do so.

2nd. The syrup is within about one inch of where the bees will store it in the combs.

3rd. It provides them with the best possible winter passage over all the combs, as the stage remains on the quilt underneath all other wrappings at all times when supers are not in use, when it is placed outside the dummy until wanted again.

Further, it enables the bee-keeper to see at a glance the position of the cluster and so place the syrup accordingly.

In winter and early spring soft candy in boxes or otherwise can be placed over either or all of the holes without disturbing the bees in any way, and last, but by no means least, its cost is very slight. Whatever the opinions of others may be, I am perfectly satisfied with it from over twenty years' experience and use of it without any mishap whatever.—ALBERT L. N. LONG, Witney.

B.B.K.A. LECTURES.

[8828] May I suggest what an excellent thing it would be if the B.B.K.A. were to advertise in the columns of the JOURNAL the various lectures to be given under the Development Grant, but especially where Mr. Herrod is to be the speaker. His name stands so high with bee-keepers that I feel sure large audiences would be the result, and a great impetus given to bee-keeping wherever he was lecturing.—A. Y. Z., Essex.

A SEPTEMBER SWARM.

[8829] If the old rhyme which concludes with "a swarm in September I never remember" be not obsolete now-a-days, it may be of interest to note that two swarms were observed in this locality on September 10th; one of them, consisting of a queen and some three pints of bees, was taken and united with driven bees.

In these parts, the skeppists feed their bees with "black sweet," *i.e.*, peppermint, and winter them successfully thereon. The question arises: Is there any virtue in peppermint for winter bee food?

"Isle of Wight" disease in the neighbourhood leads me to ask the favour of a reply to a second question. What treatment is it advisable to adopt during the winter with bees which have apparently recovered from the disease? In a multitude of counsellors there is no safety; the

variety of nostrums is bewildering!—BEE-HOLDEN NEOPHYTE.

[The September swarms are no doubt, like the March ones, caused by hunger. We do not think there is any efficacy in peppermint, but we may be wrong. The best treatment is to let the bees alone.—EDS.]

HONEY JUDGING.

[8830] I quite agree with your correspondent "Exhibitor" (page 385) that most beekeepers think their honey is the best until it stands side by side with others': then if the beekeeper is a practical man he will soon observe the difference on examination. "Exhibitor" is quite right in his idea as to what a judge should be; no one should take on that important office unless he has had experience both as a producer and an exhibitor. If a conscientious judge, he will take into consideration the appearance and cleanliness of exhibits. Your correspondent's remarks about the arranging of sections so that the judge can see both sides would be rather difficult, but taking one section to judge the colour will not do: each should be examined, and all sections should be staged so that the judge can see if they are properly cleaned and free from propolis and not glazed and covered over to hide it.—J. S. LAWTON.

[8831] In your issue of September 11th, I notice in a report of the Derbyshire B.K.A. Annual Show, that our secretary makes a reference to satisfying the critics in the open classes this year. Now, who are those critics?

For several years these classes have been a miserable failure, and I have asked our secretary, both at committee meetings and at our last annual meeting, why the show was not advertised in the BRITISH BEE JOURNAL. I was told that he failed to see any advantage in advertising in the JOURNAL. This year, however, he has done so; the results show with success, which I am pleased to see. He also refers in the report to the unsatisfactory entry in the members' classes. It is not for me to give a reason for this, but we members are never certain whether we are to have a show or not in Derbyshire, and I would suggest (it has been suggested before) that the annual report, with the show schedule combined, should be in the hands of members not later than the end of March: then those wishing to do so can prepare for the show before the honey flow, instead of receiving the schedule in July, after the flow is over. It is also unfair that the committee should know all particulars in good time, while the members in general are kept in uncertainty until the honey harvest is over. Then I contend that the judge should be appointed by the committee at a committee meeting. Both last year and this it was left for the secretary to suggest the name of the judge. I cannot say who suggested the judge this year. I question if any member except the secretary and myself had ever heard of him and certainly I did not propose him. A good many have enquired why I was not an exhibitor, and I should like to satisfy them. One reason was this: Last year I protested against the manner in which the judge was appointed, *i.e.*, before he was appointed by the committee. I had no confidence in his ability, which was justified by the results as follows: I staged twelve jars of very fine heather blend honey in the Dark Class. The second prize was awarded to buckwheat honey. I said to the judge, "You have ignored heather blend." He replied, "Which is the 'heather blend'?" I showed him mine, and he remarked, "There is very little or no heather in it, and no judge would judge it as such." Yet this same exhibit had won seven *first prizes* in classes for heather blend under some of our best judges (appointed by the British B.K.A.). Then my trophy was not suitable. Now I ask who is the best judge of such a matter, a person who never won a trophy prize in his life, or one like myself, with years of experience? I sent this same trophy to the Dairy Show in London, where it took first prize. I also sent it this year to the Royal County's Show at Windsor, and the "Royal" Show at Bristol, and was first each time. I am the oldest exhibitor in Derbyshire, and it is very painful to me, after twenty-five years, to have to withhold my exhibits from my own county show. Nevertheless, I wish the Derbyshire B.K.A. every success, but am convinced that until our members are supplied with a British bee paper instead of an Irish one, so long will they be kept in ignorance of what is going on in England and in the bee world generally.—JAS. PEARMAN, Derby.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Snakes and Bees (p. 337).—The answer to Mr. Heap's conundrum is that it is extremely unlikely that the snakes had anything to do with the destruction of the stock. Almost certainly they were grass snakes, which are not venomous, and which it is a pity to destroy. Probably they selected this hive on account of its sunny situation, and the skep being occupied by a strong lot would provide a warm sleeping chamber under the cover. In the absence of any accident, the hot summer

might account for the breaking of the combs, wherein the true solution of the loss may be found.

A Stinging Reflection (p. 343).—Tom Sleight lectures D. Wilson with rather the self-righteous air of the celebrated Jack Horner, who is said to have drawn attention to the goodness of his early boyhood. But consider! It was the men who got the stings, and the master who received the honey! No wonder the latter was willing to run the risk of another jar on the same terms. Of course, they were only men, and not horses, but still——

Treatment or Ill-treatment (p. 343).—The advice of "F. C." to scatter hives in kindness irregularly about the apiary may be good, but the effect of the treatment, like the *modus operandi*, is not fully explained. Are these hives, or parts of hives, if the treatment be thoroughly carried out, to act as decoys for suffering bees? Or is extra ventilation the object? "F. C." lays emphasis upon irregularity of "scatter," which would be both easier of attainment and better, for it could hardly have a beneficial effect upon colonies to scatter their hives regularly!

Wells' Perforated Dividers (p. 344).—In my experience the perforations make little or no difference to the ease with which established stocks in double hives may be united, either partially or completely. If "G. H." will allow his propolised divider to remain in that condition he may test the point. I often have nuclei, strong five-frame lots, two in a ten-frame hive, and requiring a queen, I may unite by the simple expedient of withdrawing the divider. This is a convenient method of uniting an established lot of driven bees with a weak lot. The procedure is as follows. Hive the driven lot on five frames and place the hive close alongside the weak stock. Give entrances to the two lots as far as possible from one another, that is, at the extreme ends of the alighting boards, facing the same way. When the bees are accustomed to these, place in the same hive, but separated by divider, each having entrance as before. Place the new hive centrally on the spot previously occupied by both hives. Each lot has now less than a foot to travel to find the new entrance, which will cause no difficulty. Later, unite as above.

"Doolittle's" Dummies (p. 345).—Here is the correct use of the term "dummy." An experienced bee-keeper reading the paragraph carefully will readily see that these fitments are not division boards, but are really dummy combs. Their use does not cut off the super-imposed sections as division boards would do. They are spaced like combs, and, according to Mr. Doolittle, bees store over them almost as readily as above the brood-nest proper.

Non-standard Frames (p. 347).—If these are simply too deep under the frame lugs, and otherwise of the correct dimensions, it should be possible to shorten the end bars, lay a straight-edge across them, and reduce the comb with a knife and fix new bottom bars. This would result in the combs being built right down to the bottom bars. I make the suggestion to "F. J. M." for what it is worth, but, of course, removal of the combs is the simplest job.

Heather and Frost (p. 352).—A discussion between "D. M. M." and "Medicus" should prove interesting. If I remember rightly, "Medicus" recorded a remarkable flow immediately after, or during, frost at the heather. "D. M. M." speaks quite casually of the ill-effect of frost. I must say that it occurred to me to wonder whether "Medicus," or his assistant, had not gone round overnight with extra wraps for the supers, without considering their effect upon the scale. One would naturally expect frost to reduce the flow to zero. Of course, as in 1912, the heather itself is sometimes a frost and may resent encroachment.

Late Autumn Feeding (p. 352).—Subject to "D. M. M.'s" correction, I think he is mistaken in advocating 2½lbs. of sugar to one pint of water. The result will certainly be crystallisation in the feeder, which will cause trouble if the feeder is of the regulator type or the float type.

Queries and Replies.

[8823] *Bees in Ceylon.*—(1) What chance of bees gathering nectar would there be on a tea estate in Ceylon? (2) Where would be the best place to obtain bees and appliances—there or in England? (3) Could you advise any special kind of bees most likely to do well there? (4) Is there any possible chance of the bees being of any benefit to the tea crop?—FRANCIS, Torquay.

REPLY.—(1) There is a great deal of good bee pasturage in Ceylon outside of tea estates. About October there is an abundance of gorse bloom, and in March the acacia yields plentifully. Besides these there is a large amount of nectar in jungle trees, etc.; in fact, there is always nectar going of some sort or other. (2) The best way is to get hives and appliances shipped out from England. (3) *Apis indica* is the most suitable, and is the only indigenous bee capable of real domestication. The next best is the Cyprian bee, but, owing to the climate, *A. indica* is preferable. (4) We cannot say.

[8824] *Brood-nest Full of Stores.*—Some of my stocks have come back from the heather so filled up with honey below that there is little room for the queens to work in. Is there anything that I can do to remedy this? I am very much interested from week to week in the "B.B.J." especially in the Queries and Replies column. If you can oblige me with a reply in your first issue I will esteem it a kindness.—A Novice, Bridge of Allen.

Reply. It is a good thing your bees have so well provided themselves with stores. Let them alone, they will be all right as breeding has now ceased for the season.

[8825] *Working for Sections without Excluder.*—Will you please answer me the following two questions through your valuable paper?—(1) When working supers without an excluder, will a piece of American cloth 6in. to 8in. wide, laid across brood frames (leaving an open space at each side) have a tendency to keep the queen down in the brood chamber, but still allow the workers a free way up to the super?—(2) Will placing a rack of sections under the brood-nest for a while before putting them on top as a super encourage the bees to go into them and start work there? Sometimes there is a difficulty in getting bees into the first rack put on.—Bees, Healing.

Reply.—(1) Yes, it would do so, but it is a better plan to use excluder zinc. (2) No, we do not think so.

Bee Shows to Come.

October 21st to 24th, at the Agricultural Hall, London. Show of honey and bee produce, in connection with the British Dairy Farmers' Association. Numerous prizes for honey, &c. **Entries closed.**

November 20th, at Bromsgrove, Worcestershire.—Annual Show of Honey, Wax, Honey Cakes, Candy, &c., will be held in the Drill Hall in connection with the Bromsgrove and District Gardeners' Association and Horticultural Society. Seventeen classes (twelve open to all). Classes for wax, honey cake, bee candy, honey sweetmeats, and honeyed fruit jelly, one for single 1lb. jar of honey. Prizes 21/-, 10/- (entry free). Entry fees in all other classes, 6d. each. Each exhibitor will receive a free admission ticket to the Show. Schedules from Arthur Aston, Cemetery Lodge Bromsgrove. **Entries close November 6th.**

Notices to Correspondents.

J. H. (High Blantyre).—*Diagnosing Disease.*—We do not think our correspondent meant to cast any reflection upon your capability or judgment in diagnosing the disease, and no doubt you were quite right. Anyway, your advice erred on the safe side, if at all.

W. E. B. (Newport Pagnell). *Heather for Bees.*—The specimen you send is the real nectar-producing heather, or, as it should be called, ling (*Erica vulgaris*).

J. V. C. (Dublin). *Apicure.*—We have had so many testimonials from those who have cured their bees, apart from our own experience, that we should say yes.

H. C. (Berkshire).—*Bees Casting Out Brood.*—It may be an overdose of naphthaline, or they may be short of stores.

J. T. B. (Glinton). *Weak Stocks.*—You should unite the bees at once, and remove the frames with foundation.

"On the Flit" (Glos.).—*Moving Bees.*—As you are sure your bees are healthy, we should, if in your place, take them to your new home.

A Young Beginner (Hants). *Sugars for Bee-food.*—Nos. 1 and 3 are Demerara sugars; No. 2 is white cane. No. 2 is best for bee-food, both syrup and candy-making.

S. J. G. (Forres).—*Making Soft Candy.*—Sorry we misunderstood you. 100degs. Fahr.

Honey Samples.

T. F. B. (Yorkshire).—(1) The honey is a heather blend. (2) Flavour and aroma good. (3) About 10d. to 1s. per lb. retail. (4) No. (5) Not good enough.

M. S. Bridgnorth).—It is a light honey, and should be shown as such.

G. F. S. W. (Hertford).—A nice honey from mixed sources, partly limes. Density and flavour are good, colour fair. It would be improved by re-straining, as it is full of air-bubbles and is slightly cloudy in appearance. Worth 56s. per cwt. in bulk, or 10d. retail.

P. (Ealing).—The sample is honey of inferior quality, being thin and poor in flavour. We should say it is foreign honey.

W. P. R. (Bettws-y-Coed).—A nice, well-ripened honey from mixed sources, rather too light for medium-coloured class. It is good enough for local shows, but not good enough on all points for a big London show.

H. T. (Worsley).—The honey is from limes. It is very thin, and we should say unripe. If ripened it should sell for 7d. to 8d. per lb., as the colour and flavour are good.

Suspected Disease.

B. J. M. (Norwich).—We believe it is "Isle of Wight" disease, but could give you a more definite opinion if you sent us some bees. If it is this disease, burn everything movable inside the hive, after suffocating the bees, then disinfect it by scorching with a painter's spirit lamp. If the hive is an old one, burn it as well.

Skep Novice (Herts). Unfortunately the bees are suffering from "Isle of Wight"

disease. This, together with robbing, is the trouble. You had better destroy at once, as we do not think a stock on combs which only three-quarters fill a skep would winter successfully.

NOVICE (Tonbridge), W. L. T. (Evesham), J. T. (Devizes), and N. B. F. (Sussex).—The bees have "Isle of Wight" disease.

I. O. W. (Canterbury). It is "Isle of Wight" disease. No cure has yet been discovered.

Special Prepaid Advertisements

Two Words One Penny, minimum Sixpence.
Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

IRISH HONEY, sections, and jars, for sale.—CRAWFORD, Apiaries, Castlederg, Co. Tyrone. v 37

B.S.A. RIFLE, takes .22 ammunition, splendid condition, 30/-, or exchange ½ cwt. honey.—JULIAN LOCKWOOD, Hunstanton. v 52

OBSERVATORY HIVE, 3s.; six tin feeders, 2s. 3d.; prize granulated light honey, twelve jars, each 18s.—OWEN, Liberal Club, Cheltenham. v 55

EALING.—Twelve strong stocks Italians and blacks, in shallow and standard hives, cheap owing to removal, £12 lot, tops and bottoms for packing.—"TYTTER," "B.B.J." Office, 23, Bedford-street, Strand, London, W.C. v 56

HEALTHY 1913 fertile queens, laying, 3s. each.—PRATT, 27, Beaconsfield-road, Croydon.

FINEST pure extracted honey, 15s.; 28lb. tins, screw cap jars, 9s. dozen, f.o.r.; sample, two stamps.—WHEATCROFT, Ashby-de-la-Zouch. v 4

FINEST CLOVER HONEY, 60s. cwt.; sample, 3d.—BUTTON, Manse Cottage, Haverhill, Suffolk. v 57

EXTRACTED ENGLISH HONEY, 13s. 28lb. tin, 50s. cwt.; sample, 2d.—DUTTON, Terling, Essex. v 51

GIVING UP BEE-KEEPING.—For sale, eight W.B.C. hives, in flat, excluders, sections, and frames in flat, ripener with strainer, &c., &c.—Box XX., c/o "B.B.J." Office, 23, Bedford-street, Strand, London, W.C. v 39

DELICIOUS MALTED HONEY, perfect health food; sample, 9d.; Cotswold honey, bottles, 8s. 9d. dozen. BOWEN, Coronation, Cheltenham. v 50

FIVE shallow supers, new combs, warranted healthy, 3s. each.—MILLAR, Mayfield, Earlswood. v 48

PURE DEVONSHIRE HONEY, 28lb. 15s., lever tins free.—BARFIELD, Gaddon, Craddock, Cullompton. v 47

LIGHT EXTRACTED HONEY, ten dozen screw tops, good flavour and constituency, 9s. dozen; samples.—WALTER S. BASNETT, Acton Grange, Warrington. v 46

SOUTH AFRICA.—Required, young lady who thoroughly understands bee-keeping, for fruit farm, near Capetown, salary £36 per annum, and 10% on profits; residence, board.—Apply, AGRICULTURE S.A.C.S., 23, Army and Navy Mansions, Victoria-street, S.W. v 45

¾ CWTS. finest Scotch clover honey, granulated, in 28lb. tins, at 16s. each, tins free, and f.o.r.; sample, 3d.—HENRY GOW, Crossford, near Dunfermline. v 40

FOR SALE, 5 cwt. of clover extracted honey, in 28lb. cans (two of 56lb.), price 60/-, buyer to pay carriage; cases and cans to be returned carriage forward.—J. O'LEARY, The Cottage, Ballyhooly, Co. Cork. v 38

SECTIONS, three dozen, good quality, 30s., carriage paid.—DR. LLOYD, Cradley Heath, Staffs. v 41

FINEST LIGHT HONEY, granulated, 28lb. tins, 75s. cwt.; sample, 3d.—WAIN, Thorpe Bank, Wainfleet. v 36

COMPELLED to give up owing to the adjoining property built on; three stocks (White Star), empty hives, draw out brood frames, excluders, &c.—Particulars from HOULISTON, Oak Villa, Whalebone-grove, Chadwell Heath. v 43

FOR SALE, overstocked, three healthy stocks, with 1913 queens, on frames or with hives; particulars.—HART, Nether Garvock, Dunning, Perthshire. v 26

WANTED, an emasculated black Persian kitten.—Box 4, "B.B.J." Office, 23, Bedford-street, Strand, London, W.C. v 88

WANTED, good clover honey, in exchange for seltzogine, cost 18s.; banjo, 30/-; Panama hat, 30/-; honey drum, 1 cwt., 10/-; lady's bicycle frame, oil cake breaker, all good; what offers? or sell cheap.—156, Moston-lane, Manchester. v 13

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

"I.O.W." DISEASE.—Bowen's tested cure, 1s. 6d.; antiseptic balls, for winter use, boxes, 6d.—Coronation, Cheltenham. v 49

QUEENS.—Three young black queens to spare, hardy, healthy, 2s. 6d. each.—C. PARISH, Addington, Surrey. v 44

"ISLE OF WIGHT" DISEASE.—Our first circular describing our cure being exhausted, a revised edition is at Press, for which we invite immediate application for free copy.—ALFRED FRENCH, Richmond-road, Cambridge. v 53

CARNIOLAN QUEENS.—Special offer, selected imported queens, fertile, 5s. each, immediate dispatch.—C. T. OVERTON and SONS, Crawley. Catalogue free. v 42

FOR SALE, stocks, on standard frames, moderate prices; particulars.—MASON, expert, Poplars, Moorend, Stony Stratford. v 54

Editorial, Notices, &c.

ALTRINCHAM AGRICULTURAL SOCIETY'S SHOW.

The honey classes in connection with the above show, held on September 24th, were much below the average on account of the poor season experienced in Cheshire. The Rev. T. J. Evans, M.A., judged the exhibits, and in the afternoon lectured to a large audience, from the bee-tent. The weather was fine, and over twenty thousand people attended the show. The following were the awards:—

Complete Frame Hive. 1st and 2nd, Seeds and Bees, Ltd., Liverpool.

Observatory Hive.—1st, Seeds and Bees, Ltd.; 2nd, Bowdon Day School; 3rd, Seamon's Moss School, Dunham Massey.

Twelve 1-lb. Jars Extracted Honey.—1st, H. C. Barlow, Newcastle; 2nd, G. R. Arrand, Heapham; 3rd, A. S. Dell, Leigh.

Honey Trophy.—Equal 1st, A. S. Dell and Wm. Dixon, Leeds; 3rd, Seeds and Bees, Ltd.; r., F. N. Dixon, Leeds.

Twelve 1-lb. Sections.—1st, Wm. Reece, Tarporley.

Twelve 1-lb. Jars Extracted Honey.—1st, A. Hulse, High Leigh; 2nd, S. N. Grant, Bailey, Chester; 3rd, E. Atkinson, High Leigh.

Beeswax.—1st, A. Hulse; 2nd, T. A. Jones, Halkyn; 3rd, J. Boden, Barnton; r., E. Atkinson; h.c., G. H. Parker.

Six 1-lb. Sections.—1st, N. E. Broughton, Wilmslow; 2nd, W. Reece; 3rd, W. S. Basnett, Acton Grange.

Six 1-lb. Jars Extracted Honey.—1st, A. Hulse; 2nd, J. Johnson, Knutsford; 3rd and r., J. H. Shaw, Winsford; v.h.c., J. Boden; c., H. Brown, Bowdon.

Six 1-lb. Jars Extracted Honey (dark).—1st, A. Hulse; 2nd, H. Brown; 3rd, J. Johnson; r., Mrs. H. Taylor, High Legh; h.c., B. O. Rayson, Brooklands.

Six 1-lb. Sections Comb Honey.—1st, H. G. Broughton, Wilmslow.—E. W. Franklin., Mouldsworth, Chester.

CUMBERLAND AND WESTMORLAND B.K.A.

The annual show of the above Association was held in conjunction with the Northern Counties Fruit Congress and Show in the Market Hall, Kendal, on September 24th and 25th. The show, as a whole, was a very fine one, and the honey section, which occupied the greater part of one side of the hall, was pronounced excellent by visitors. The clover season has been almost a complete failure in many parts of the two Northern counties, but this has to a great extent been compensated by the large quantity of very fine heather honey harvested.

The exhibits were judged by Messrs. L. S. Crawshaw, of Malton, Yorks, and R. Steele, of Newburgh, Fife, who made the following awards:—

OPEN CLASSES.

Twelve 1-lb. Sections other than Heather. 1st, C. W. Dyer, Compton, Newbury; 2, Robert Robson, Wooler, Northumberland; 3rd, W. Patchett, Caistor, Lincs.; v.h.c., John W. Nelson, Appleby, and Jos. G. Nicholson, Langwathby, Cumberland.

Twelve 1-lb. Sections of Heather Honey.—1st, Robert Robson; 2nd, J. M. Balmbra, Alnwick; 3rd, Thos. Walker, Hawkshead, Ambleside; v.h.c., J. E. Bousfield, Kirkby Stephen.

Twelve 1-lb. Jars Extracted Honey.—1st, James Henry, Egremont, Cumberland; 2nd, James Hyde, Lytham, Lancs.; 3rd, W. Patchett; v.h.c., John Dixon, Clifton, near Workington.

Twelve 1-lb. Jars Granulated Honey.—1st, Fred W. Frusher, Crowland, near Peterborough; 2nd, Douglas Bouch, Aspatria; 3rd, Joseph Price, Old Hill, Staffs; h.c., Geo. Kerr, Carlisle.

Twelve 1-lb. Jars Medium-coloured Honey.—1st, Douglas Bouch; 2nd, Fred W. Frusher; 3rd, Thos. Walker; v.h.c., James Hyde; h.c., W. B. Allister, Throckenholt, Wisbech; c., S. Sanderson West Wratting, Cambs.

One 1-lb. Section (Gift Class).—1st, W. Patchett; 2nd, J. M. Balmbra.

One Jar Extracted (Gift Class).—1st, W. Patchett; 2nd, Joseph Price.

One 1-lb. Section.—1st, J. E. Bousfield; 2nd, W. B. Marchington, Carlisle; 3rd, Douglas Bouch; v.h.c., Thomas Walker; h.c., John Steel, Carlisle.

One 1-lb. Jar Extracted Honey.—1st, John Dixon; 2nd, Arthur G. Pugh, Beeston, Notts; 3rd, Sidney Sanderson; v.h.c., Joseph Price and Douglas Bouch; h.c., Thos. Walker.

MEMBERS' CLASSES.

Twelve 1-lb. Sections.—1st, Jos. G. Nicholson; 2nd, Douglas Bouch; 3rd, Geo. Chatham, Staveley, Kendal.

Six 1-lb. Sections.—1st, Thos. Walker; 2nd, Rev. E. Hindle, Cumrew Vicarage, Carlisle; 3rd, Jos. G. Nicholson; h.c., Douglas Bouch; c., John Steel.

Six Sections Heather Honey.—1st, Geo. Moir, Calderbridge; 2nd, Thos. Walker; 3rd, J. E. Bousfield; c., Isaac Willan, Levens, Milnthorpe.

Twelve Jars Extracted Honey. 1st, John Dixon; 2nd, Douglas Bouch; 3rd, James Bateman, Milnthorpe.

Six Jars Extracted Honey.—1st, John Dixon; 2nd, Douglas Bouch; 3rd, J. J. Grieve, Moorville, Carlisle; c., G. H. Lowther, Crosby, Ravensworth.

Six Jars Medium-coloured Honey.—1st.

James Henry; 2nd, John Dixon; 3rd, Douglas Bouch; v.h.c., Thos. Walker.

Display of Honey and Wax.—1st, W. B. Marchington; 2nd, Isaac Willan.

Frame Hive (made and exhibited by a member of the C. and W. B.K.A.).—Silver Medal awarded to Geo. W. Millward, Kendal.

Beeswax (open).—1st, Chris. Hudson, 14, Ulleswater Road, Lancaster; 2nd, Fred W. Frusher; 3rd, G. H. Lowther; v.h.c., John M. Stewart, Mollance Gardens, Castle Douglas, and Joseph Price; h.c., Thomas Walker; c., James Henry.

The Silver Challenge Cup, presented by Dr. Arnott to the exhibitor owning not more than twelve hives, who obtains the highest number of points in the classes confined to members of the C. and W. B.K.A., was won outright by Mr. John Dixon, of Little Clifton.

The Bronze Medal and Certificate of Merit were both awarded to Mr. Douglas Bouch.—G. W. AVERY, Hon. Sec.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE DUTIES OF AN EXPERT ON TOUR.

[8832] When dealing with this subject last week (p. 302) I should have recommended the use of Naphthaline or "Apicure" in fresh hives into which bees are turned after temporary confinement in a skep.

To the expert's necessaries might be added one of the small tools to be used as a scraper, and for prising up the ends of frames; a long-bladed knife, such as a table knife, and a towel. I use a knife with a wooden handle, sold by tool manufacturers. One of the most valued appliances in my apiary is a laboratory bucket made of indurated fibre. It resists the action of chemicals and hot water, and weighs about 3lb. If the expert could manage to suspend one to his bicycle or motor bicycle, it would carry his smoker and several other articles, and be of much service to him.

The "wool" for removing propolis is, of course, cotton wool.

It has been pointed out to me that the apiaries visited by my touring expert contained no skeps. The omission was unintentional. I cannot help wishing that one of those bee-keepers who, from time to time, advocate the use of skeps as permanent abodes for bees—or if they do not advocate them, go so near it that an ordinary mind is unable to appreciate the distinction—had to deal with it. The fact is that no expert can give conscientiously a certificate of good health to a skep apiary without driving the bees and cutting out the brood combs for examination from every skep. Hence, as is being recognised with remarkable unanimity by our hard-headed colonial cousins, no bee-pest Bill that allows the use of any hives but those with movable frames as permanent abodes for bees can be considered logical or practical.

In present circumstances, I should recommend to an inspecting expert the following course. In a mixed apiary leave the skeps to the last. Then one after another turn them up, using as little smoke as possible, sever the side attachments of the central brood comb with the long knife, and by pressure with the flat of the blade move it so as to expose as far as possible its own surface, and that of the neighbouring combs. If the skep has been provided with skewers so much the worse for the expert, and possibly the skep. In the event of anything seen or smelt arousing suspicion prescribe treatment (B) or (C) according to the case.—H. J. O. WALKER, Lieut.-Col.

BEE STING AND ITS EFFECT.

[8833] About the end of July I was stung by a bee on the inside of the lobe of the ear, and within twenty minutes I was unconscious for a few minutes. I have heard of such cases before, but have never suffered previously anything more than some little inconvenience, having been stung frequently. The doctor who attended me said his impression was that I was somewhat run down in health—I had had long continued exhausting mental work. The doctor injected with a hypodermic syringe a mixture of digitalis and strychnine, which relieved the heart, and in the course of a week or ten days I was all right again.

As my experience may be useful to some of my fellow bee-keepers, I shall describe the symptoms. The bees had been very vindictive during the season, and were handled with great difficulty, and my gardeners were unable to work anywhere in the vicinity of the hives. Whether this had anything to do with the special virulence of the sting I do not know. After being stung, and extracting the sting, within about three minutes I felt an intense itching in the palms of both hands. I took a walk round the garden, and within ten minutes the pain in my ear became intense, and I went into the house

to get some ammonia to apply to the sting. When I looked at myself in the glass I found that my face and eyes were swollen and red, and in taking off my clothes I found my chest was covered with a rash, like scarlet fever. I went to bed immediately, but was unable to lie down flat owing to the great oppression in my breathing. Meanwhile my wife had come in and evidently saw that I was seriously ill, so she telephoned immediately for the doctor, who fortunately was within a few hundred yards. Between the telephone message and the doctor's arrival I had become unconscious for a few seconds, and was aroused to find my wife trying to force some brandy into my mouth. My hearing was very acute, but I could not speak, and when the doctor arrived he found me collapsed, my face ashen grey, and pulse negligible. After the hypodermic injection I gradually recovered, and in about an hour I was able to speak, and felt more comfortable. The attack was accompanied by flatulence and consequent pressure upon the heart.

I saw in the papers the other day that a man had died through the sting of a wasp. The doctor also told me that although he had never seen a case before, he noticed about one such case was reported each season in the papers.—VICTIM.

[We do from time to time hear of such serious effects from the stings of wasps, but fortunately in the case of bees they are exceedingly rare. When serious results follow a sting it is generally owing to the victim suffering from a weak heart, the sting producing a shock which causes the sufferer to collapse unless a remedy is resorted to in time. It is well known that there are times when bees are very vindictive, and that their sting appears to be more virulent, but even then the only inconvenience is greater pain at the moment of being stung. There are some constitutions on which stings cause not only swelling but produce a rash like erysipelas, but these are rare. Nor are the dangers from bee stings so great as those of wasps, or even the bites of flies and mosquitoes, all these being potential sources of blood poisoning, owing to the fact that they may settle on some poisonous material before attacking a victim. We print the above letter in order that anyone suffering from a weak heart may take care to resort to a remedy in good time.—EDS.]

HONEY JUDGING.

[8834] As an exhibitor of honey, I have been deeply interested in the above subject, especially as the letter (8810, page 374) referred to an exhibit of mine at a local show. Mr. J. Lawton, the writer of the letter says: "Consequently, in the light honey class one exhibit which was of the exact shade of the single glass supplied by the B.B.K.A. for grading honey for medium colour, instead of being disqualified for being entered in the wrong class, was awarded first prize."

At the Royal Show, at Bristol, exactly the same exhibit was entered in the light-coloured class, which was open to eighteen English counties, the Isle of Man, and the whole of Scotland, Ireland and Wales. It was accepted as a light honey, and was awarded the reserve card, and highly commended, as reference to the BEE JOURNAL will prove. The judge who officiated at the local show is a first class certificated expert of the B.B.K.A., and a well-known Shropshire bee-keeper and lecturer.

Last, but by no means least, the Editors of the "B.B.J.," with their wide experience of judging honey, state (after examining a sample taken from one of the bottles) that it is a light honey, and should be shown as such. I have also shown the honey to several exhibitors, who compared it in the bottles as exhibited with the grading glasses, and all were satisfied that it was lighter than the glass. I have known Mr. Lawton judge honey on several occasions at a local show, and I have every reason to believe that he is just and fair, but had he been judging on the occasion to which he referred in his letter, my exhibit, instead of having its just reward, would have been disqualified. Therefore, I naturally agree with what he says as to the importance of a judge being qualified. I certainly think that in every case a judge should be an up-to-date bee-keeper of several years' standing, also well versed in the art of exhibiting. Exhibitors by combining together should see that only such men are appointed, and agree to accept his decision as final (or lodge a protest at the time) and not question his awards afterwards.

My final advice to both judges and exhibitors is to study the pages of "Producing, Preparing, Exhibiting, and Judging Bee Produce," where the subject of "Honey Judging" is fully dealt with in a broad and open-minded manner.—W. SHUKER (Third Class Expert), Middleton-Scriven, near Bridgnorth.

[8835] I quite agree with the idea which was evidently in "Exhibitor's" mind, when he wrote on the subject of "Judging" (page 385), as certainly the way it is carried out at the present time is far from satisfactory. Of course, I speak generally. Only a week ago I was told by an exhibitor of the way the honey was judged (?) at a fairly big horticultural show near here. The judge simply

looked at the exhibits held up to the light—for colour—tested the density by the air-bubble, never took off a cap or a section case, to see the condition or taste the quality, and then placed the cards. The whole twenty odd exhibits occupied him less than twenty minutes to judge. This kind of thing brings contempt on our craft, and instead of encouraging the aspiring new bee-keeper only disheartens him, while many old and respected exhibitors, like Mr. Pearman, keep their honey at home.

We all recognise the difficulties of judging, so few palates are alike, but surely such a large body of bee-keepers as we are, numbering in our ranks many eminent, talented, and capable men and women who are always ready and willing to place their knowledge and experience at our disposal, can devise some scheme, whereby the anomalies of the past can be overcome. Why is it we never see or hear of a "lady" judge? We are told, and certainly with truth, that women are the best bee-keepers. Certainly, too, they are the best, and most adept "preparers for the show-bench." Again, they do not smoke as a rule, and I should think on that account they would possess a more keen sense of taste than men. Surely then, there is no reason why we should not have them as judges. The County Associations, I think, might do a great deal in the matter of reform by issuing a list of the names of a few members capable of judging (at least a little after the proper way), such list to be sent to every flower show, &c., where honey classes are included in the schedule. The judges should offer their services gratuitously unless the flower show committee wish to pay their expenses. I think it is at these local shows that the bulk of the grumbling is heard and where most of the injustice originates.

The time is certainly very near when we shall have to have two classes for light honey, sainfoin and clover. Bee-keepers are very quick to learn—though not so ready to appreciate the result—when they once enter in the wrong class.

Nothing is more painful than to hear these continual complaints upon the placing of awards, and for my part I strongly agree with the suggestions for the training of the judge, who should be in every way above suspicion, and, besides, have a thorough system upon which to work when officiating in the show-tent. I hope many more will voice their opinion on this most important subject.—R. Litman.

"TIPS" FOR BEE-KEEPERS.

[8836] Here is a "tip" for selling sections. Get a square biscuit tin from your grocer (costing about 8d., but I buy mine for less), cut a square or round piece out of one side, and fit in a square of glass. This may be secured to the tin by pasting round the edges outside a neat band of lace paper, such as is used for section glazing. Now, this box will hold sixteen sections. Get your village post-office or general storekeeper to place this box in his window, and offer a commission of 2d. or 3d. on every section sold.

This arrangement once started will keep the tradesman supplied as fast as required. These cases are excellent for storing comb honey all the winter, because they take up so little room on a shelf or in a warm cupboard, and keep out all dust and insects.

Wintering Bees.—The best kind of device for a winter passage is an empty fig box filled with candy. After the candy is eaten the box serves as a capital passage-way over the frames for the bees to cluster in, with quilts over this, and a double newspaper spread over on top. The "lift" keeps it tightly down, and excludes all draught. Moreover, when the paper is raised higher in the centre the hive and quilts are quite dry inside if the roof should be leaky. Should the roof leak at all the best remedy is a sheet of flat galvanised iron, 30 gauge, bent over and nailed underneath the edges. Some bee-keepers urge that the iron covering is too hot in summer, but I have never found any such objection, for the wood underneath acts as a non-conductor; moreover, supers need to be warm, otherwise they are not readily taken to.

Rats and Combs.—How fond rats and mice are of empty combs! I recently put out a stack of shallow supers near a small stream for the bees to clean out. When I went again three days afterwards a huge rat jumped out, and imagine my surprise and dismay to find four supers completely ruined, with every comb eaten from the frames. I used to be greatly troubled with mice during the winter, but since I have taken to storing the combs in tin-lined tea cases with a chloride of lime floor these pests have done no damage.

These cases are very cheap, and certainly form an excellent chest for the storage of drawn-out combs.—A. H. Bowen, Cheltenham.

A WORD FOR THE SKEP.

[8837] Referring to your correspondent's "Word for the Skep," on page 387, I am not sure whether the lesson he wishes to teach is intended for the bees or their owner. I am supposing the former, as "he establishes a competition

in thrift." The movable comb hive, if somewhat more expensive to start, furnishes unlimited possibilities both for the bee-keeper and the bee in the practice of thrift and economy, and returns surplus honey for the former, as a reward for personal labour, with no loss and little agitation of bee life when taking it from the hive. I agree with Mr. Desmond that no doubt the skeps would do better with more than 12lb. of stores. Take into account this warm autumn weather, which means so many extra months to feed; what provision are you going to make to meet these conditions? Simply look on? I read in the papers of a lady at Hampton Wick procuring 201½lb. of honey from a hive, 150½lb. extracted and 54 sections. How many forty pounders would this magnificent yield occupy?—A. H. Hamshar.

FROM A READER IN MICHIGAN.

[8838] I enclose a picture of a part of my apiary here and also my old one at Waseca, from which I have now removed. I began the season with six colonies, and now have eighteen. I used the "Alexander" method of increase, and they built up rapidly, but I bought five young laying queens to save time, and that has helped to give me strong colonies. Naturally I did not expect much surplus honey while making so much increase, but the hives are well stored for winter, and we have honey for the family of five, and have "sweetened" several neighbours. I have sold $10 worth, and may sell a little more. I also have seven brood frames full of honey laid up for feeding purposes. This I consider pretty good, as the season was a poor one here, owing to very dry weather in this part of the State.

REV. E. EWELL'S APIARY AT WASECA, U.S.A.

REV. E. EWELL'S APIARY, LITCHFIELD, MICHIGAN, U.S.A.

I have a large parish to care for, and the time that I can give to the bees is limited, but I find it gives me recreation and good health. I have built up a good bee-keeper's library, and enjoy studying the bees. I appreciate the BRITISH BEE JOURNAL, and keep on the outlook for any items of interest.—(REV.) EDWIN EWELL, Litchfield, Michigan, Sept. 10th.

SLOW FEEDERS.

[8839] As a prospective bee-keeper, I have read the correspondence which has recently appeared in your journal on the subject of slow feeders, and can quite understand the objections to any feeder having metal parts which rust.

While rather struck with the home-made one described by A. L. N. Long, in your current issue (8827) it has occurred to me that if the jars are covered by open cheese cloth, which allows to pass satisfactorily syrup such as should be used for autumn feeding, the much thinner syrup used in spring must pass through too quickly.

Before deciding to adopt the arrangement referred to it would be interesting to learn what has been Mr. Long's experience in this connection. Does he use more closely woven cloth for the thin syrup, or what?—JAS. BANNATYNE.

DERBYSHIRE NOTES.

[8840] I stated in the "B.B.J." of August 14th (8778) that I had taken my stocks to the moors and was only waiting for bees and weather to do their part. They have both responded splendidly, and the result is "a bumper season" amongst the heather. According to the look of things, it is not quite over yet, for to-day (September 8th) has been ideal, and my thoughts have been with my bees on the moors when, often I fear, they ought to have been elsewhere.

At first I only took three stocks, but on visiting the bees on August 25th I found conditions so favourable and prospects of a good season so rosy, that the next day I moved three more on to the heather. I wish now that I had taken all I have. One stock (a White Star Italian) filled a super of shallow combs from Tuesday to Saturday, besides parting with nearly one-half of its bees to two adjacent stocks which I had placed in the line of flight, although some distance away. One more for my mental note-book. We live and learn. The saying is old, but in this case, at any rate, quite true. I won't do the same thing again.

Twice have I met your contributor, Mr. T. Sleight, on the moor. He appears to hold a roving commission in that locality. With the genius of a Sherlock Holmes he is able to spot the location of bees by watching their flight from the heather. That, at any rate, is how he found out mine. In these little meetings we have had I have been sitting like Saul at the feet of Gamaliel, drinking in words of honeyed wisdom. But he is old enough and able enough to speak for himself.

As to results. My best stock will have given me at least 60lbs. in the supers. It has more than filled two lots of shallow frames. From another I have had two racks of sections, and from two more single supers of shallow frames. Two other stocks were not strong enough for supers, but were taken simply for winter store, which they have gathered in abundance. What there is in the bottom of my supered stocks I do not yet know, but the brood combs appear to be glutted.—D. WILSON.

HEARD AT ALTRINCHAM SHOW.

[8841] Young Man (evidently anxious to impress several lady friends with the vastness of his knowledge): "Yes, the bees gather honey in the summer to last them during the winter, but bee-keepers *stun* them, and take the honey away."

Chorus of feminine admirers: "Oh! What a shame!"

Perhaps you, Mr. Editor, will be able to give your numerous readers particulars of the latest methods of stunning.—F. W. WHITE, Hale.

BRIEF REPORTS.

Bees in this part of the country were very backward in the spring, with empty combs the result of wet weather. However, they did fairly well after the rainy period was over. I was able to take about 400lbs. from twelve hives. I have never seen foul brood or "Isle of Wight" disease, and hope I never shall, and I may mention that my bees are descendants of some that have been bred on these premises for over 200 years.—B. W. G., Wickwar, Glos.

I am pleased to send you the result of the year in this part of Kent. I am only a young beginner, but have a friend and adviser in Mr. C. T. Overton, of Crawley, who I have known all my life. Last year I captured a stray swarm, which I hived, and it produced three swarms, so I started this season with four stocks, two in skeps and two in frame hives. Last year was a bad one, and I had a job to bring my stocks through safely, owing to shortness of stores, but I gave them candy, which saved them. The season in this part has been very indifferent, owing to lack of sunshine and to the cold nights and mornings, but I have succeeded in

building up six more stocks, and obtained four through driving a neighbour's skeps. These I put into frame hives, and I now possess fourteen strong stocks. My take of surplus honey from my own stocks was about 60lb., but I think I might have done better had I been more experienced. There are only three other bee-keepers in this village, and none of us with any disease in our hives as yet. I hope to have good luck next year.—C. F. Gee, Whitfield, Kent.

In response to your appeal for reports of the season, &c., from bee-keepers, I gladly add one from our corner of Somerset. Bees were generally backward in spring, and not many colonies were in a position to take advantage of the enormous quantities of apple blossom which we have here. They, however, went ahead after that (swarms were very few) and were just doing all right up till the middle of June, when the dry weather set in, and though they stored fairly well, our "takes" would have been nearly doubled had we had a few good showers in the first week of July. About 60lbs. to 70lbs. has been about the largest average from one hive. Very few have taken more than that. Our honey is very good in quality, and very dense. More honey has been stored in the brood chamber than usual, owing to the cold nights. Bees now, in consequence of the very fine and warm weather we have experienced lately, are very busy on the ivy, working quite as hard and fast as they did in July, and nearly all our hives have a big patch of brood, which speaks well for 1914.—R. Litman, Expert, Castle Cary.

Queries and Replies.

[8826] *Weather and Honey Secretion.*—Will you allow me to ask a few more questions for reply in your valuable paper? (1) Can I assume that as long as the clover is blooming nectar is coming in? (2) The weather has been uniformly dull, will that affect the flow? (3) If so, will it recommence with the event of sunshine? (4) Could you tell me if the enclosed flower contributes to the harvest? (5) In spring we have a large quantity of May round here, should I get any surplus from that? (6) At this time there is a large quantity of blackberry blossom out, does that yield well? (7) Can you recommend a book dealing with the chief sources of nectar, their habit at seasons, and possible cultivation?—A. W. Brock.

Reply.—(1) No, it does not follow; there are seasons when the clover secretes very little nectar, there are also odd days when it does not secrete even in a good season. (2) Yes, heavy dews at night with bright sunshine in the daytime give the best conditions for nectar secretion. (3) Yes. (4) It is Birdsfoot Trefoil (*L. corniculatus*), both honey and pollen are obtained from it by bees. (5) If you work the stocks up strong enough and the weather is good, you should be able to do so. (6) Yes. (7) We do not know of a book wherein the information you require is condensed. We have seen one excellent note book extending over a period of fifty years, but have not been able to persuade the compiler and owner to publish it.

[8827] *Destroying Bees.*—Will you kindly inform me in the Bee Journal how long the bees should be kept shut up after giving them a few puffs of the sulphur smoke at the entrance of the hive? I have a colony which has collected no honey in sections all the summer, although I fed them several times, and, as I fear they will not live through the winter, thought it better to destroy them now, and so have the hive ready for a swarm of bees in the spring. —M. A. S., Cornwall.

Reply.—About a quarter-of-an-hour.

[8828] *Moving Bees.—Privet Honey.*—I want to remove some bees now from rather less than a mile away. How long should I keep them closed in? Is privet flower likely to give a bad flavour to honey? It has a very strong smell, and the bees work a lot on it just now.—Scot Bee-keeper.

Reply.—(1) You can move them any time now; there is no need to keep them confined. (2) If gathered in large quantities it is liable to taint the honey.

[8829] *Bee Parasites.*—Will you kindly answer the following in next week's Bee Journal? I procured some driven bees a few days ago, and though I noticed nothing unusual while I was driving, on examining them to-day I find they are infested with some insect. The queen alone has, I should say, some seven or eight stuck in around her head and shoulders. They are red in colour, and about the size of a pin's head. Could you tell me: (1) their name; (2) whether they will injure or perhaps kill the queen; and (3) the best way to get rid of them? Thanking you in anticipation.—H. Trevise, Kent.

Reply.—(1) The small red insects are *Braula coeca*, or blind lice, a parasite of the bee. (2) They congregate on the queen in the autumn, and hinder her from ovipositing, beyond which they do little harm, though they irritate the bees. (3) Blow into the hive a little tobacco smoke,

and then sweep the floor-board. See "British Bee-keepers' Guide Book," page 169.

[8830] *Moving Bees.*—I am at present living at New Barnet, in the North of London, but I shall shortly be removing to the S.E. district. I have at present three stocks, and I wondered if it would be safe to move them, at about the beginning of November, to Norwood. If it is, would it be best to send them by rail, as explained in the "Guide Book"? Supposing it is not possible, the gentleman who has bought this house would not mind them remaining here till spring, but then, of course, I would not be able to look after them. Naturally, I would rather take them with me. I presume that owing to the excitement of travelling they would consume more food than under normal conditions. Would it be advisable to place a cake of candy over each? I am only a novice at bee-keeping, but I am very keen on it; thus I shall be greatly pleased to see your reply to this lengthy note. I hope the answer will be in the affirmative.—B. C. Woodroffe.

Reply.—You can move them by road or rail in November packed as described in "Guide Book." Why not let them go with the furniture on the van?—they would be quite all right on top if carefully moved. Yes, put on a good cake of candy.

[8831] *Keeping Spare Queen through Winter.*—Would you kindly give me advice through your valued Journal? I have a spare queen that I would like to keep alive until the spring. One of my stocks is very strong the bees occupying ten brood and ten shallow frames. Would it be safe to put the excluder between the two boxes and introduce the queen into the shallow frames either above or below the brood-chamber? There are ample stores (over 60lbs.) in the twenty frames. My reason for wishing a spare queen is to avoid the unfortunate experience I had this year of finding one of my hives queenless in the spring.—Glasgow.

Reply.—You might try the experiment, but we are afraid it will not succeed. Still, there is just the chance.

[8832] *Queen Ceasing to Lay.*—I am sending you per to-night's post a dead queen bee for examination. The following is a brief history of the case. A late second swarm was given to a neighbour of mine, who was anxious to commence bee-keeping in August last year. With care and feeding it seemed to do all right, and in the spring, though not very strong, was still a nice little stock. A rack of sections put on resulted in some clover honey being obtained, but in July the bees swarmed. The owner returned the swarm to the hive, queen and all. A fortnight ago he discovered that there was no brood in the hive, though a queen (the one I am sending you) was present. He consulted me, and I decided that the best course was to unite them with another small stock, which was possessed of a good breeding queen. This we did to-day, catching the barren queen, which I shall be glad if you will examine. I should like to know if her failure to breed can be traced to any injury. This might be the case, although she seemed lively and all right when we caught her. On the other hand, in the scuffle resulting from throwing back the swarm, this queen may have become substituted for the one previously in charge, and then proved unfertile. In case she had failed to become fertilised, I would, of course, have expected some brood, but there was none.—W. I., St. Bees.

Reply.—The queen was a fertile one, and had ceased laying on account of food ceasing to come in. Had you fed the bees no doubt she would have commenced to lay again.

[8833] *Bees in Observatory Hive.*—I am the proud possessor of one frame of bees and a queen, which I keep in a three-frame observatory hive in my sitting-room. During the last two years and a half I have noticed one or two points, which, though new and interesting to me, are doubtless familiar to you, and I should be glad if you could explain them. When this stock first started it consisted of three frames of "golden" bees, brood, stores, etc., in various stages, but no queen. In due course queen-cells were made, and at last a "golden" virgin appeared. Immediately on her arrival the bees pulled down the remaining queen-cells, which was rather premature on their part, because this virgin not only seemed incapable of finding the exit of the hive, but did not show any inclination to try to find it. Needless to say, in about six weeks' time the stock began to dwindle. I replaced this beauty with a bought golden queen, who is the mother of all the bees I now possess. I got this queen in August, 1912. She was more the colour of gingerbread than a golden, and when her first brood appeared they were jet black, no signs of golden being visible. She continued to produce these blacks till October.

In May, this year, the stock had again dwindled, till it consisted of little more than three bees and the queen, so I bought two frames full of black bees, brood and stores. Having united these two colonies successfully together, the queen began to lay. This time her brood looked pure (?) golden. Occasionally there were hybrids, but on the whole she seemed to produce only goldens. During the honey-flow she laid day and night, and actually covered two whole frames with eggs, sometimes placing as many as three eggs in a

cell. At the same time she laid two drone eggs, only one of which hatched. The hive being now full of bees, &c., it used to be a great excitement to see which one would spot first the queen or the drone. This drone was pure (?) black. From the end of June to the present time the brood is black again. What I should like to know is: (1) Do hybrid queens always bring forth their brood in batches of colour, like this queen did, or is it usually black-golden-black-golden, &c., for each bee? (2) What colour were this queen's parents? (3) When there were enough bees to cover the three frames, why should the queen stick to the top two and lay three eggs in a cell, instead of going to the lower frame, which was more or less empty, except for honey and pollen?—W. G. Coates.

Reply.—(1) Not always; generally the females, both workers and queen, are crossed, while the male remains pure, in cases where a black queen is mated with an Italian drone. The inverse is the rule when the Italian queen is mated with a black drone. (2) The parents may have been apparently goldens, but as this is an artificial strain, it is supposed that the male of a different race may have so influenced the ovary of the queen as to affect the future progeny. Some believe that these are cases of atavism, or that heredity is transmitted through the food supplied to the larvæ by the nurse bees. (3) Because as heat rises the upper frames were warmer.

[8834] *Changing Locality of Apiary.*—(1) Is the district between Verwood and Wimborne a good one for honey production? (2) Is the honey of good quality in a normal season? (3) Is it safe to move healthy bees into a district that has been affected with "Isle of Wight" disease?—W., Dorset.

Reply.—(1) Yes. (2) Yes. (3) Much depends upon circumstances. As the bees are healthy we should risk it.

BEE-KEEPING AND THE CINEMA.

West-country bee-keepers will have an opportunity, which they should not miss, of seeing Mr. J. C. Bee Mason's bee-pictures, as he is to lecture at the Olympia Theatre, Newport, Mon., for one week, commencing October 13th.

Notices to Correspondents.

Will the correspondent who wrote under the *nom de plume*, "Francis," Torquay, in last week's "B.B.J.," please send his full address to Editors, as they have a letter for him, and his address has been mislaid.

A. K. (Kingsbridge).—*Insect Nomenclature.* The insect is not a bee, but the common drone-fly.

X. Y. Z. (Lochie).—*Queen-cell.*—It is easily accounted for, it had been reared from an egg.

Novice (Lancs.). *Broodless Stock.*—(1) Let the bees alone, no doubt there is a queen, it being not unusual to find stocks broodless at this time of the year. (2) Personally, we prefer British bees.

E. L. P. (Alresford).—*Curious Behaviour of Bees.*—From your description we should say that the queen was a virgin. The probable cause of the bees uncapping the brood was want of food, or the Ayles' solution was used too strong, either of which reasons would also cause them to swarm out of the hive as described. A queen which has never been mated will lay, but the eggs produce drones only.

J. D. Paul (I.O.M.).—*Cleaning up Wet Combs.*—(1) You might put the combs out at, say, 3 p.m., about twenty yards away from the hives, on a bright day to be cleaned up by the bees. They must be carried in in the evening as soon as it is dark. This is not a practice we recommend, but with care it can be done safely. If you let the combs remain wet, fermentation will set in.

Constant Reader (Mollinsburn).—*Preparing for Winter.*—(1) See reply to J. D. Paul. (2) No. The feeder should be removed and a cake of candy placed above the cluster under quilts. (3) Yes, because they usually do not get the chance of flying much.

Mayhew (Sussex).—*Dark Honey at Grocers' Show.*—It was lime honey and contained honey-dew. Hence its colour.

Honey Samples.

W. (Aberdovey).—Honey of good flavour and fairly good in aroma and density. It is, however, dull and cloudy in appearance, and would be much improved by warming and re-straining to get rid of the air-bubbles and tiny particles of wax and pollen which it contains. If this is done it should sell for 10d. to 1s. a lb. jar.

B. W. G. (Wickwar).—No. 1, flavour poor, density and colour fair; it is inclined to granulate. No. 2, fairly good colour and flavour. It also has commenced to granulate. Neither are good enough for showing.

C. P. M. (Dorset).—A nice heather blend, worth from 10d. to 1s. per lb. retail.

A. S. (Loughton).—A very poor sample of honey, and only fit for making vinegar or mead, or feeding back to the bees after thoroughly boiling. It is spoilt by honey-dew.

A. N. C. (Cheshire).—A nice sample of light-coloured honey, good in flavour, aroma, and colour, but of poor consistency.

Suspected Disease.

P. B. M. (Manchester), L. G. M. (East Malling), Nucleus (Wanstead), J. R. (Blantyre), and L. B. W.—The bees have "Isle of Wight" disease.

C. H. (Yiewsley).—There is no disease in bees sent.

G. L. (Oxon).—It is black brood; use Apicure in the hive.

B. G. E. K. (Ilford) and A. W. T. (Knowle).—The bees have died from "Isle of Wight" disease.

Special Prepaid Advertisements

Two Words One Penny, minimum Sixpence.
Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* "**Business**" *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

GRAND STOCK, in heather hive, 25/-; three 4-frame nuclei, 7s. 6d. each.—WALLACE, Bramhall, Cheshire. v 66

LIGHT HONEY, 7d. per lb.; bottled, 8s. 6d. per dozen.—HASTINGS, Welcombe, Stratford-on-Avon. v 59

CAMBRIDGESHIRE HONEY, 28lb. tins, 15s.; sample, 2d. stamps.—G. MILLIS, Hills-lane, Ely, Cambs. v 76

LIGHT CLOVER HONEY, screw top bottles, 8s. 6d. dozen; 28lb. tins, 15s.; sample, 2d.—ANDREWS, Rock-road, Peterborough. v 69

FOUR good stocks black bees, with four extra hives, all W.B.C. pattern, extractor, ripener, quantity of foundation, frames, smoker, complete outfit for starting bee-keeping; what offers?—TEELING, Gravesend Villa, Whitstable. v 75

WANTED, good sections and extracted honey; also a few heather sections.—Particulars to DELL'S, Leigh, Lanes. v 74

HONEY FOR SALE.—Several dozen well-filled sections, at 8s.; also extracted, in 1lb. bottles, at 8s. 6d. dozen.—ARTHUR TREBBLE, Romansleigh, South Molton. v 70

FINEST EXTRACTED HONEY, light, and good flavour, chiefly clover, 58s. per cwt.; sample, 2d.—SIMCOX, 17, Victoria-road, Fallings Park, Wolverhampton. v 68

35 LB. dark extracted honey for sale, 4d. lb., or offer, in tins, carriage paid.—A. BROCK, Beech Lodge, Epping-road, Buckhurst Hill, Essex. v 63

HONEY, first quality sections, 9s. 6d. dozen, three dozen, 27s., cash with order.—R. COUSINS, The Rosary, Misterton, Gainsborough. v 72

1 CWT. of pure medium coloured honey, in 28lb. tins, 15s. each, 56s. per cwt.; sample, 2d.—W. SHUKER, Middleton, Scriven, Bridgnorth. v 71

BEAUTIFUL COTSWOLD HONEY.—Bottles, 8s. 9d. dozen; sample, 1½d.—BOWEN, expert, Cheltenham.

OWING TO REMOVAL.—For sale, good healthy stocks English bees; also empty hives; references to former customers as to quality; small quantity heather honey.—BRADSHAW, Allerston, Pickering. v 61

A FEW very choice prolific 1913 British queens for sale, selected strain, guaranteed healthy.—CROWE, Central-avenue, Wigston, Leicester. v 60

16 DOZEN LIGHT HONEY, at 8s. 6d. per dozen 1lb. bottles, and seven 28lb. tins, at 15s. per 28lb. tin, carriage forward, cash with order; sample, 2d.—A. E. WILLETT, Cheveley, Newmarket, Cambs. v 62

BAR-FRAME HIVE, healthy, used once, two crates, sections, dividers, smoker, new, 5s. 6d.—TREVENER, Hughenden-road, High Wycombe. v 65

IRISH HONEY, sections, and jars, for sale.—CRAWFORD, Apiaries, Castlederg, Co. Tyrone. v 37

FINEST CLOVER HONEY, 60s. cwt.; sample, 3d.—BUTTON, Manse Cottage, Haverhill, Suffolk. v 57

PURE DEVONSHIRE HONEY, 28lb. 15s., lever tins free.—BARFIELD, Gaddon, Craddock, Cullompton. v 47

COMPELLED to give up owing to the adjoining property built on; three stocks (White Star), empty hives, draw out brood frames, excluders, &c.—Particulars from HOULISTON, Oak Villa, Whalebone-grove, Chadwell Heath. v 43

FOR SALE, overstocked, three healthy stocks, with 1913 queens, on frames or with hives; particulars.—HART, Nether Garvock, Dunning, Perthshire. v 26

WANTED, an emasculated black Persian kitten.—Box 4, "B.B.J." Office, 23, Bedford-street, Strand, London, W.C. v 88

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

WARNING.—For safety, use Bowen's "I.O.W." remedy. 1s. 6d.; antiseptic balls, winter use, 6d.—Coronation, Cheltenham.

OBSERVATORY HIVE for sale, solid mahogany, brood, shallow, and sections, cheap, 38s.—E. JACQUES, Apiary, Walsall-rd, Lichfield. v 64

PLANT NOW.—Limnanthes Douglasii, flowers in early spring, strong plants, 1s. 4d. 100, carriage paid.—F. LONGLY, Hythe, Kent. v 77

1000 FIRST-CLASS SECTIONS, at 8s. 3d. per dozen, packed in spring cases, free on rail, cases returnable.—Address, IRISHMAN, "B.B.J." Office, 23, Bedford-street, Strand, W.C.

HEATHER HONEY WANTED, in large or small quantities, by City firm.—Send sample, price, and particulars, to F. R., "B.B.J." Office, 23, Bedford-street, Strand, W.C.

Editorial, Notices, &c.

AN INTERESTING MEETING.

In June last Mr. C. P. Dadant announced that he and Mrs. Dadant were about to make a trip to Europe, not altogether for pleasure, as Mr. Dadant's object was to examine for himself the local differences in quality of Swiss, Italian, and other races of bees, for it is known that Swiss bee-keepers have always maintained that they found Italians inferior to their own race of bees. Mr. and Mrs. Dadant sailed from New York direct for France, and after visiting bee-keepers in that country went on to Switzerland. A warm invitation from our friend M. Ed. Bertrand, reminding us that we had not been to Switzerland for nearly two years, and urging us to run over and meet Mr. and Mrs. Dadant, who were to be the guests for two or three days of M. and Madame Bertrand at Nyon, could not be resisted, so we packed up our things, left London at eleven o'clock one morning, and after travelling all day and night reached Nyon at 9 a.m. next day. At the Chalet we met with a hearty reception, and were pleased to find that Mr. and Mrs. Dadant had arrived there before us. It was some years since we had seen these American friends, the last time being at their home in Hamilton, Illinois, so that there was a great deal to talk about. Mr. Dadant had with him a note-book of questions, and put down any answers that he found useful for his purpose. He is the present owner of the *American Bee Journal*, and not only writes for it, but he is also well known as a correspondent to the leading Continental bee papers. In this respect he is following in the footsteps of his father, who was so influential a propagator of modern methods, and whose hive is extensively used in some parts of the Continent, more especially in Switzerland and France, due to its advocacy by M. Bertrand in his journal, the *Revue Internationale d'Apiculture*. Although Mr. Dadant had been visiting bee-keepers, attending meetings and talking about bees, M. Bertrand had planned an assembly of some of the leading bee-keepers, who met at the Chalet, all of whom we were pleased to meet again and to renew our acquaintance. The only regrettable feature was the inability of the President of the Association, M. U. Gubler, to attend owing to an attack of influenza, which prevented him from leaving his home. We have much pleasure in reproducing a photograph of the company, taken by M. Odier, and it will be seen that M. Bertrand, although eighty-one years of age, is still hale and hearty, and we trust that he may long remain so.

GROUP OF BEE-KEEPERS AT THE CHALET, NYON, SWITZERLAND, GUESTS OF M. AND MADAME BERTRAND.

The company consisted of the following:—Back row (standing) from left, J. Chaponnière, President of the Geneva B.K.A.; L. Gautier, syndic of La Rippe; M. Bignons, forester; P. Odier, M. Forestier, Director of the Deaf and Dumb Institution; C. P. Dadant, Editor *American Bee Journal*; M. Paintard, and M. A. Warnery. Front row (sitting), T. W. Cowan, Chairman B.B.K.A., Madame Forestier, Mlle. Martine, Mesdames Chaponnière, Dadant, Bertrand, and M. Ed. Bertrand.

The meeting was a most enjoyable one, and M. and Madame Bertrand entertained their visitors with their usual hospitality.

Many were the bee topics discussed, and we are sure that Mr. Dadant was able to add considerably to his notes. It was an occasion that all present will look back upon with pleasure.

The next day an unexpected visitor made his appearance at the Chalet, Dr. Loris Melikoff, of the Pasteur Institute, Paris, who was investigating the question of foul brood in Savoy, where this disease has been causing great mischief. The inquiries were being made for the Government of France in view of intended legislation. Dr. Melikoff came over from Evian to consult M. Bertrand as to what was being done in Switzerland, and was pleased to find Mr. Dadant and ourselves present to give our experience. All visits come to an end, and it was with regret that we saw Mr. and Mrs. Dadant depart for Italy the next day, not, however, without a promise that their next visit would be to England, where they would be able to spend more time than they could give now at the end of their journey. Mr. Dadant is not only one of the largest honey producers in America, but is also the largest comb-foundation manufacturer. When he does come to this country we are sure that he will receive a hearty welcome.

THE B.B.K.A. CONVERSAZIONE.

The autumn conversazione of the B.B.K.A., to be held at the Lecture Hall, Zoological Gardens, in Dairy Show week, on Thursday, October 23rd, at 5 p.m., promises to be a very successful and interesting one. Though Mr. T. W. Cowan has, owing to an important engagement, been obliged to defer giving the conclusion of his lecture on "Bee-keeping in Other Countries" until another occasion, Mr. A. G. Pugh has kindly consented to fill his place, and read a paper on "Judging," a subject which is arousing a good deal of interest just now. Mr. H. J. Menzies, whose experience in "Marketing Honey" has been exceptionally extensive, will be sure to have some useful hints to give in his paper on this subject, which is one of the greatest importance to all those who keep bees for profit. Tea will be served at five o'clock, members of the Council acting as stewards, and any bee-keeping novelties and articles of interest sent for exhibition will be shown during that time, so that they can be examined and discussed under more favourable conditions than at the close of the meeting, when many have trains to catch.

It is hoped that members will bring as many friends as possible to the conversazione, ladies being specially invited. The nearest station is Camden Town Tube, or a motor-'bus (Service No. 3) from Piccadilly Circus takes visitors almost to the door of the hall.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of September, 1913, was £6,511.—From a return furnished to the BRITISH BEE JOURNAL, by the Statistical Office, H.M. Customs.

AMONG THE BEES.

By D. M. Macdonald, Banff.

THE HONEY SEASON.

The editors have been asking for brief reports of the season's honey gathering, and, fortunately, those I am able to give are on the whole favourable. To numbers of bee-keepers, 1913 has been the best season for many years, and to many the best in their experience. One county paper, giving two columns about the honey season, concludes it has been a very good one to fairly good. Reports are quite common of 100lbs. surplus being obtained from best hives, and in some few cases over 200lbs. has been obtained. Although these are exceptional results, bees have paid well during the past summer and autumn. The very fine quality of the clover yield is commented on in most reports. A few examples may be given. "My twenty stocks yielded over half a ton of honey from the clover, and a good return in addition from the heather. My best gave 150lbs." "My best hive completed 108 sections, others gave 93lbs. and 84lbs." "The bees collected quite a record store in a remarkably short time, as much as 90lbs. to 110lbs., and some had stores of over 50lbs. left."

An Aberdeen daily paper reports very favourably. "The honey harvest has this year been one of the most lucrative experienced for many years. Several bee-keepers have secured from 170lbs. to 190lbs. from individual hives. In less favoured districts, where 30lbs. to 40lbs. is the average yield, this year from 50lbs. to 60lbs. are common takes. The season and environment may account for this discrepancy partly, but management bulks largely. In illustration of this the extraordinary success of one of the most expert apiarists in the North is worthy of record. "In this apiary 175lbs. to 190lbs. per hive were obtained within the space of six weeks from clover alone, while in one instance 260lbs. were taken off a frame-hive during the season. When bees were strong, high yields were got from the heather, seventy to eighty sections being fairly common. The honey from both sources is of superior quality and of very fine flavour." Further south it has been

a good season, as the following instances testify: Edinburgh, seven hives gave 414lbs. in sections; best, 105lbs. Blairgowrie, thirteen hives, 686lbs.; best hives, 140lbs. and 120lbs. Perth, four hives, 584lbs. in sections; best, 210lbs. and 185lbs.

The honey harvest in Ross and Inverness, notwithstanding that the bees were in the majority of cases rather weak in spring, has been the most successful for the last twenty years. In Inverness-shire three racks are a common take, and not a few have taken over 100lbs. surplus from one hive. In parts of the county "never better" sums up the situation. In Ross-shire the honey harvest has no equal in the history of the industry.

Owing, however, to the prevalence of disease, and the effect of last year's miserable weather leaving colonies weak in spring, some leading apiaries have done rather poorly, and others have been wiped out. Thus one advanced apiarian writes me: "My returns will only average from one to one-and-a-half racks." Another, "A few made from eighty to ninety sections, but alongside of them others have gathered barely enough to winter themselves." One of the hitherto most successful northern men reports: "The season has been only a moderate one, chiefly because in spring hives were weak in bees and scant of stores. Again, during June and July, with lovely weather, east winds and severe drought prevailed. So the season has been a mixture of good and evil, but with the good largely predominating.

Arrangement of Winter Brood-nest.—It seems to be generally conceded that during the long winter bees arrange themselves in a close cluster of an oval form, the centre bees with their bodies in every cell, another layer closely lying over these, and the remainder packed into the spaces between frames of comb. The outer rings of the cluster at least are in close touch with the life-giving nectar in the open or closed vats wherein it is carefully stored and preserved. At times this food may be passed on from the bees in contact with the stores, who can hand it along from one to the other until all are satisfied. Or it may be, as we believe, that at regular periods, or perhaps almost constantly, the close union we think we see is in steady movement, the ins slowly but surely taking the place of the outs. This latter process is more in keeping with what we observe in the movements of clusters of bees at other seasons of the year, and it must be remembered that bees do not hibernate even in zero weather, but require small supplies of food to keep up their own vitality, and also the heat of the hive interior. That bees may cluster to the best advantage I am of those who believe that a "nest" should be formed before the keenest cold sets in, that is, a certain part of the central combs should be dry and empty for the bees to cluster the closer and keep up the warmth better. Solid slabs of sealed stores appear to make a colder centre for the cluster, unless the bees have a space below the frames wherein to congregate. This the 3½in. eke supplied with the "W.B.C." body-box partly provides. I have great faith in the belief that a deep winter space is good for ventilation and for the well-being of the bees.

Spreading Disease.—Two cases came under my notice recently which go to show what good legislation might do to check the spread of disease. The one was a case of foul brood. The owner sent for the "expert" to diagnose the reason for the gradual dwindling of his stock, and was informed that it was a case of virulent foul brood in the advanced stage. The hives were packed for the moors, and to the heather they went, it may be to infect scores of healthy stocks. The expert warned the bee-keeper of the danger, but without results. "What could I do?" he remarked. "I could only advise, I could not compel." The pity of it!

Visiting a most beautiful part of one of our most picturesque Midland Counties, an ideal district for fruit bloom, lime, clover, and heather, I found apiaries being wiped out wholesale by "Isle of Wight" disease. Three years ago it was unheard of in the county, but since then it has spread like wildfire. All my informants blamed the indiscriminate mixing of bees at the heather. From far and wide, whole apiaries are transported from the fertile straths and howes to the higher ranges of one or two glens with ideal reaches of *Calluna vulgaris*. Men who knew that their bees had disease of some kind, if they did not fully realise its deadly virulence, sent their hives in 1911 and 1912, with the consequence that they returned with the bees all but extinct, after having infected very many others from an extensive area. Last year it swept over the greater part of the county like a tornado, and almost everywhere my enquiry as to how their bees were doing was met by the reply, "Ma bees! Why, they're a' deid!"

HONEY JUDGING.

We have received a large number of communications on this subject, but, unfortunately, the majority of these, instead of suggesting anything of a useful nature merely take the form of personal recriminations. We have therefore decided that the correspondence on this matter must now cease.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE EXPERT ON TOUR.

[8842] Colonel Walker's articles on the duties of touring experts, which have appeared in recent issues of the "B.B.J.," are welcome because of their tendency to maintain a high ideal in respect to one of the most important branches of County Association work. The primary function of the associations is, to my mind, educational, and as instruction is imparted through the agency of their experts, it is essential that the teaching shall be by example as well as by precept. It follows, as the night the day, that if the expert is careless, those who receive his visits will be disposed to think lightly of diseases whose highly infectious nature is so strongly emphasised in the best text-books. There is, I believe, much more brood disease than perhaps even the Council of the British Bee-keepers' Association suspect; and no stone should be left unturned by the County Associations to get rid of it.

A Bee with One Antenna.—On Sunday, October 5th, I had an opportunity of testing one of Huber's experiments. Finding that a bee had climbed to the top of a small plant, and, partly numbed, was clinging to it, I picked it off, and on making an examination found it had only one antenna. When warmed in the house it flew to the window, whereupon I caught it again and presented to it a spot of honey. When the honey had been sucked up I went to an open door; and presently the bee took wing, marked the spot, and, rising in circles to the house-top, disappeared. Hastening to the hive near which I had found it, I saw it enter. I had no trouble in identifying the bee, as I had taken the precaution to dust its back with flour. The bee was not uneasy on account of its loss, which seemed to be no dertiment.—Chas. Heap, Reading.

USEFUL APPLIANCES.

[8843] The ever welcome and interesting articles by "D. M. M." suggest to me one or two very useful appliances experience taught me to get. When first starting, about ten years ago, one of my colonies was threatened with ruin by ants. To keep them out I adopted the following plan, ever since employed with complete success.

Instead of wooden legs to the floor-board I inserted square headed bolts about 8in. long, leaving about 5in. to form a leg. Putting four good bricks firmly upon the ground, as level as possible, I then placed the hive on them, and with a spanner applied to the square heads of the bolts adjusted the level of the hive to a nicety, always giving a little fall to the front, to let off rain and prevent it going into the hive. Around the bolts I tied a rag, upon which from time to time I put a little kerosene, which insects will not crawl over. In addition to the alighting board, I have a large slate as extension, but between them leave about ½in. space, over which bees can easily pass but other insects do not.

Another most useful article which every amateur would appreciate is a piece of gauze wire about 9in. by 12in. I always found it very disconcerting to have a hundred or so bees fly up when the frames were all exposed for going through the hive, &c. To avoid this I at first used one of the quilts put over part of the brood chamber while working on another part, but there is one disadvantage about this plan. You do not know what is under the quilt until it is lifted, and when lifted some bees are sure to stick to it, and others fly up—often the cross ones. But if a piece of gauze is put on first, the bees can be seen and smoked, but cannot get out and so must go down. After using this article once no one would wish to be without it. If necessary I can put your readers in the way of getting them very cheaply; a firm has offered to supply them with tin-bound edges, which prevent them fraying or getting out of shape. The ground under my hives (standing about 8in. clear) is dust-dry all the year round. —T. K.

IS "ISLE OF WIGHT" DISEASE CONTAGIOUS?

[8844] Personally I think not. I have in my possession a hive absolutely free from disease, covering now nine frames, which has come through a very severe test.

Last year I had three hives situated close together, including the one mentioned above; one of these three contracted "Isle of Wight" disease, which was a very prolonged case, the bees taking in all about a month to dwindle away, during which time they were crawling up the legs of the other two hives; in fact, very often making an attempt to enter. This surely should be sufficient to infect the other stocks,

yet they withstood it all, and returned a good surplus, and again this year, although I purchased a swarm and hived it on the combs upon which the other bees had died of "Isle of Wight" disease, yet they all are quite healthy.

Now if the disease were contagious, surely if crawling bees did not carry the disease the combs would.

The disease, in my humble opinion, is in the bees themselves, and if they are strong and vigorous they resist contamination. I am fully in accord with Mr. H. Wigley's letter, *vide* the RECORD, that we have allowed our bees to become degenerate by too much pampering—an excess of sugar and scarcity of honey are not conducive to rearing disease-resisting qualities. To make up a shortage in the bees' food by giving sugar instead of honey for a year or two would doubtless not affect them, but continue it for probably twenty years and we find they lack that stamina which should keep them safe from "Isle of Wight" disease.

I wonder if bee-keepers have ever thought beyond their hives; take, for instance, cattle. What, might I ask, would be the result of keeping cows from grass (their natural food) and feeding them, if you will, upon hay, &c., for twenty years? I fancy there would be a change for the worse.

Why did we not hear of this disease in the old skep days? The answer is obvious, because bees in those days were not bolstered up with comb and sugar, but made their own combs, and practically all lived on their proper food, honey.—H. WILCOX, Olton.

UTILITY AND VERACITY IN BEE-TENT DEMONSTRATIONS.

[8845] It was with pleasure I noted, some little time ago, that the Council of the British Bee-Keepers' Association had revised the conditions of examinations. To be successful in any pursuit we must move with the times, and in granting certificates of proficiency in bee-keeping, an industry which has advanced with rapid strides during the past few years, the conditions should be such that only those with the most up-to-date knowledge can obtain a certificate. I go further, and give three other qualifications which are absolutely essential—ability to speak the King's English correctly, absolute truthfulness in statements made, and ability to answer questions put by the audience.

Your readers, and even the Council of the British Bee-Keepers' Association, may imagine that all this has been obtained in the past, but such is not the case. Who has not heard a lecturer's glowing account of the large amount of honey from single stocks, given in such a manner that the audience takes it as the average instead of an individual case?

I am not in the habit of writing to papers, especially in the form of criticism, but after attending the Mammoth Show at Cambridge this year I made up my mind that in the near future I would have a word to say on this subject in your bright little paper.

As a bee-keeper I was naturally drawn towards the honey department and the demonstrating tent. In the latter a lecturer (whom I afterwards learnt held the first-class certificate of the B.B.K.A.) was holding forth. Amongst a number of other inaccuracies he described "the 'W.B.C.' hive, which we have before us, is one of the best to use." The hive shown was not a "W.B.C." at all, but a Lee's single-walled "Holborn." I need not weary your readers with other instances of blunders. The study of a good English grammar would have been useful, and from remarks made by those standing near me, would have prevented the speaker from jarring the nerves of others in the audience besides myself.

At the conclusion of his address the lecturer bolted from the tent, as if he expected to be arrested, without giving the audience an opportunity of asking questions.

I have heard many lectures by the B.B.K.A. lecturer, Mr. W. Herrod, and agree with the words with which he always concludes: "Now, come along, ask as many questions as you like. The more the better. My answers shall be short and to the point. I feel I can do more good in answering questions for a quarter of an hour than by talking to you for one and a half hours, for by questions you can obtain the information you desire, which I may not have given in my lecture."

I have known him remain for a good half-hour answering questions, and am one of many hundreds who have benefited by his replies. Almost any person can read up a subject and give a lecture, but it requires a man with a thorough practical grip of his subject to cope with questions.

I am afraid I have trespassed too much upon your space, but if members of the Examining Board see these remarks, I hope they may be the means of obtaining a more careful selection of lecturers, and, if I might offer a suggestion to the Council now that the B.B.K.A. has entered an era of importance in the country—it is that they cancel all certificates prior to 1912, make a fresh start, and be careful that only those who will be a credit to the industry receive their hall mark in the form of certificates, and so prevent these fiascos in the bee-tent which are all too common.—A BELIEVER IN EFFICIENCY.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

"*I.O.W.*" *and* "*F.B.*" (p. 354).—I can hardly agree with Mr. Mace that his system is more drastic than the other, for in this respect they are identical, both involving the usual treatment as a swarm of the colony from an infected hive. It is, indeed, hardly the case in view of the fact that "Isle of Wight" disease is more to be feared than foul brood and it is in no panic-stricken state of mind that destruction of the combs is advised. Travelling experts will, I think, bear me out in saying that remedies fail only too often in the hands of the ordinary owner. Generally speaking, the honey and wax will pay for the operation. Even if there were a loss, I should regard it in the light of an insurance premium. It is possible that no hard-and-fast line can be fairly drawn, since in this matter of the treatment of disease "Everything depends upon the bee-keeper."

The Skep (p. 364).—It is clear to me that Mr. Hamshar, and possibly other of my critics, misunderstands my position. I have not compared the skep *qua* skep with the frame-hive, although thoughtless criticism of my defence endangers my doing so! I am, however, anxious to be scrupulously fair. My belief is this, that the frame-hive is eminently suited to the educated and careful bee-keeper, whilst the skep holds its own in the hands of the less educated. I am sure no statement could be more guarded than that! I believe, further, that the frame-hive is a positive menace in the hands of the ignorant, whilst there are districts, particularly poor or moorland districts, where the ignorant cannot make it pay. Mr. Hamshar gives the clue to his own non-success as a skeppist when he says: "I knew nothing about feeding, wintering, &c., and I lost my bees through ignorance." One lesson of the kind is, however, usually enough, and I venture the opinion that he would manage better to-day. Mr. Hamshar makes a good point when he says that "the novice with the frame-hive searches for information," but whilst this may be true of the beginner full of delightful enthusiasm, it is not always true of the old let-alone skeppist, whose only reason for the adoption of the frame-hive is that he has heard of big yields, without in the least appreciating the skill which has obtained them.

Re-queening (p. 373).—"D. M. M." appears to overstate his case considerably when he says, "Six weeks in the busy season is a great loss." For one thing, "six weeks" is exceptional, particularly where nature is allowed "to take her own way," as in the case of natural swarming. In the case of artificial division at the wrong time, the bee-keeper himself is responsible for any loss. But loss of what? If the new colony is expected to build up into a stock for winter, there is ample time for it to do so. But if honey is the intention, then the extra bees from the introduced queen will in all probability be too late to act as gatherers, whilst they will certainly act as consumers. Perhaps "D. M. M." will kindly correct me if I have misunderstood what he means by "loss."

Fixed Comb Hives (p. 386).—I have so often found cases like that instanced by Mr. Mace, and have so often put them right, that "horror" has given place to boredom. Only a few days ago I came across a frame (*sic*) hive in which the combs ran right athwart the bars, with a foundationless and neglected section-super over a thoroughly well attached excluder! I have marked it for driving next year, the only practical solution. Now, if any hives are "sealed books," such as these are, they are far less accessible than the skep, but it would be wrong to condemn frame-hives in general on that account! Let us put the blame where it belongs, upon the shoulders of mismanagement, for the frame-hive itself is not at fault. I imagine I hear its supporters saying "Thank you" in tones of irony. But the trouble is that "the skeppist of the old school" treats it as he has been accustomed to treat the skep, with the important reservation that he is reluctant to renew the combs. I have seen this so often that theoretical outbursts leave me unmoved. I am not out of sympathy with the endeavour to teach the skeppist. Far from it. But I see that either he is unreceptive to the teaching, or that the teaching has not gone far enough. Lectures in themselves are quite insufficient, and must be followed up by a good deal of practical and sympathetic instruction. This is costly, and it is possible that here is an outlet for the Government grant, a share of which, if available, would, no doubt, be welcomed by Affiliated Associations.

Lysol (p. 386).—Many thanks to Mr. Hadlow for his practical suggestion. Such a lath as he describes did not occur to me, and if it will work, it is at once simpler and better than the more cumbrous device suggested by me. But I did not understand that he used Lysol without dilution. That makes all the difference. A correspondent enquires as to the strength of solution to use with the evaporator, and I have advised him to try a five per cent. solution. Even this might be too strong, and should be the subject of experiment. I hope that no one has attempted to use undiluted Lysol in such large quantity.

BRIEF REPORTS.

We have had an average crop this season in North Oxon, with plenty of swarms, several of the largest filling from forty to fifty sections each. The established stocks were backward in the spring owing to the bees having put into the surplus chambers all honey gathered last year. The shortage of stores was first noticed by seeing the bees come crawling out of the hive (the strongest) in a dying condition, and it took over 5cwt. of sugar to pull all the stocks through the winter. What a contrast this autumn, as all colonies at home and out apiaries are strong and rather too well provisioned. Shall I remove any? *No*, as a frame of foundation or two added next spring will put that all right. Although glutted with stores, the bees are working hard on the ivy bloom every fine day. Last Friday a lady sent to say the bees were swarming on the ivy; yesterday a neighbour called to inform me there was a swarm on their ivy, and again to-day another person met me with the same news.—DAVID HANCOX, Deddington, Oxon.

The season here has been a remarkably good one for quantity and quality of honey.—T. STAPLETON, Gwinear, Cornwall.

I thought you and your readers might be interested to hear that our one hive of hybrid Italian bees has yielded us 73½lbs. of excellent honey this season, mostly from limes, of which trees there is an abundance in the neighbourhood.

This is our second season, and my wife and I are proud of the excellent results of our delightful hobby. Is not this good for London? [Yes, a very creditable return.—EDS.] The JOURNAL we find very helpful, and much look forward to its weekly arrival.—WILLIAM P. HOLLAND, Streatham, S.W.

You very kindly answered my queries in the "B.B.J." of August 8th, 1912, on artificial increase, and I had now hoped to give you a glowing account of the results. Unfortunately, the bees all wintered badly, and were in too weak a condition for me to attempt swarming; then the weather in spring was against rapid increase in bees. In one hive the queen never started laying, she had possibly been chilled. In another, two and three eggs were laid in each cell. Altogether, it was a bad start, but I am hopeful for another year. The clover season here (West Cumberland) has been a failure, wet, cool, sunless days; on July 9th the temperature in the morning was 39degs., and the glass hung 3 feet from the ground. However, the heather has amply repaid. One old bee-keeper told me he has taken his bees to the moors for twenty years and never had a return equal to this year, so, taking all in all, the season has been about the average. Wishing you and the "B.B.J." every success.—GEORGE MOIR, Calderbridge, Cumberland.

In response to your request for brief reports of the season, I have pleasure in sending you particulars of my own experience, which I consider is a fairly good average result. I commenced the season with three stocks, and from these I got 198lbs. extracted honey. In July I bought a strong swarm, this gave me 20lbs., making a total of 218lbs. for the season from three stocks and a swarm. If you do not consider this good enough to include in your next issue it will make no difference, I shall still continue to be a very interested reader of both your weekly and monthly papers.—E. C. G., Nantwich, Cheshire.

The season in this district has been fairly good, the takes reported by several of our members having reached the three figures. The quality of the honey is good in most cases; one member in particular took over 100lbs. from one hive. The bees are hard at work on the ivy and other flowers, just as vigorous as in the height of the season.—J. S. LAWTON, Hon. Sec., Bridgnorth B.K.A., Salop.

Queries and Replies

[8835] *Bees in an Awkward Position.*—I should be much obliged if you would inform me, through your "Queries and Replies" column, of the best means of destroying two colonies of bees which have existed for many years under the weather tiling of an old house. During the last few seasons they have been very troublesome, invading the house and attacking passers-by in the garden. If possible, the work should be done without taking off the tiles, as this would probably involve serious interference with an old structure. The entrance used by the bees is between the overlap of the vertical tiles; the combs, probably, are between the upright timbers of the wall, between the tiling and the lath and plaster of the inner surface. A quantity of cyanide of potassium in powder, placed on a board just outside one of the entrances, had no effect on the bees whatever. A local bee-keeper, who is also a carpenter, and has taken stocks in various odd places, refused to attempt the job of removing these.—G. F. SCOTT.

REPLY.—From your description of the place we should say the only way to destroy the bees is by means of a solution of cyanide of potassium syringed into the holes. We should hesitate to do this on account of the danger to the human

inhabitants of the house; also, if the bees are in a pretty open space, we fear the cyanide would not be of much use.

[8836] *Uniting Bees.*—I have two stocks of bees, one of which is queenless and has been so for some time; the other has a queen and a little sealed brood. This latter hive was attacked by robbers, and after getting them out, and when dusk had set in, I stopped the entrance with perforated zinc. I may say both hives are weak in bees. What I propose doing is to place a piece of perforated zinc on top of the queenless hive over all the frames, and stand the hive with the queen on the top of the zinc, covering all up, leaving this in position for (say) a week, and then withdraw the zinc. The two hives are now about thirty yards apart. Do you think this will answer? I am certain, if I leave the hive that was being robbed where it is, it is bound to be cleared out, and this may start robbing all round. I may say that for a good many weeks the robbed hive has only had about a half-inch entrance, so the bees ought to have been able to defend themselves. Both hives have plenty of stores.—X. Y. Z., Bungay.

Reply.—Proceed as you suggest, and at the end of a week remove all the combs not covered by bees, and place all those with the bees and brood in one hive. You should have at least eight combs left in the hive well stored with food.

[8837] *Dealing with Weak Stocks.*—On looking over my hives I find two with but few bees in, several combs clogged with pollen, a couple of combs with some brood in all stages, and each has possibly enough honey to winter on. By few bees, I mean about 2lbs. in one and 3lbs. in the other, as a rough guess. Do not the pollen-clogged combs (new pollen) indicate aged queens, although I thought the one hive had a young queen at the beginning of the season? What would you advise me to do with them? Amalgamate and take the pollen-clogged combs out, or try them over winter as they are? I have foul brood a little in one or two hives. Ought I to put a piece of Apicure in all my hives for winter, or start with it next March? Would it be a safeguard if put in all my hives next summer? I have about thirty-four, and foul brood in small lots for years in odd hives.

Reply.—The pollen-clogged combs do not indicate an old queen. We should take away the worst queen and unite both lots, at the same time removing the worst pollen-clogged combs. Pack hives for winter with a couple of pieces of Apicure and Naphthaline in each. Then next season use it in all hives until they are quite free from disease.

[8838] *Bees Refusing Food.*—A neighbour of mine has a stock of bees, a June "cast," which has done nothing all the summer beyond breeding and laying in stores. A fortnight ago the bees covered eight frames well filled, but since that time wasps have attacked and robbed them of about one-half their stores. There also appears to be not more than half the number of bees in the hive. We have succeeded in getting the best of the wasps by adopting the method suggested by your correspondent, Mr. Desmond, last week (8824, page 395). Of course, we are helped in this by the change in the weather. Now the trouble is to get the bees to feed. We have tried them with honey, and also thick syrup, but they refuse to come up into the feeder (a new one). I know the syrup is all right, because I am giving the same to my own stocks, which take it freely. On opening the hive last week we found the base of two queen-cells in the middle of one comb. Do you think the bees are queenless? Would this cause them to refuse food? Being a beginner, I am not quick at sighting the queen, and I have been unable to see her since the trouble began. What is the best thing to do with them? Unfortunately, it is my friend's only stock, the wasps having eaten the original colony right out.—Herbert P. Stuart.

Reply.—We do not think the stock is queenless. Take out two or three of the combs and pour warm syrup into them, then put on the feeder with warm syrup in it. Do the work in the evening, and no doubt the bees will then come up to the feeder. Failing this you will have to trust to candy for the winter food supply.

WEATHER REPORT.

Westbourne, Sussex.

September, 1913.

Rainfall, 3·33 in.	Minimum on grass, 35 on 11th, 15th, & 21st.
Above average, 1·13 in.	Frosty nights, 0.
Heaviest fall, ·91 on 4th.	Mean maximum, 64·2.
Rain fell on 13 days.	Mean minimum, 51·3.
Sunshine, 157.8 hrs.	Mean temperature, 57·7.
Below aver., 23·9 hrs.	Above average, 1·7.
Brightest day, 24th, 10·4 hrs.	Maximum barometer, 30·279 on 10th.
Sunless days, 5.	Minimum barometer, 29·360 on 14th.
Maximum temperature, 69 on 11th, 26th, & 29th.	
Minimum temperature, 42 on 21st.	

L. B. Birkett

DEATH OF SIR CHARLES SKELTON.

The Sheffield Bee-keepers' Association has lost a good friend through the death of its first President, Sir Charles Skelton. He had been a bee-keeper for several years, and was keenly interested in the progress of the industry. An Alderman of the city, Sir Charles was an ardent temperance advocate, and was much honoured by his fellow citizens for his upright and moral character.

Bee Shows to Come.

October 21st to 24th, at the Agricultural Hall, London. Show of honey and bee produce, in connection with the British Dairy Farmers' Association. Numerous prizes for honey, &c. **Entries closed.**

November 20th, at Bromsgrove, Worcestershire.—Annual Show of Honey, Wax, Honey Cakes, Candy, &c., will be held in the Drill Hall in connection with the Bromsgrove and District Gardeners' Association and Horticultural Society. Seventeen classes (twelve open to all). Classes for wax, honey cake, bee candy, honey sweetmeats, and honeyed fruit jelly, one for single 1lb. jar of honey. Prizes 21/-, 10/- (entry free). Entry fees in all other classes, 6d. each. Each exhibitor will receive a free admission ticket to the Show. Schedules from Arthur Aston, Cemetery Lodge Bromsgrove. **Entries close November 6th.**

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

J. C. F. (Ayrshire).—*Heather for Bees.*—The sprigs of heather are both common ling (*Calluna vulgaris*), the plant from which the best heather honey is obtained. Heather honey producers claim that only on the hills can the best quality be gathered, but this may be due to the fact that *Erica cinerea* (bell heather) grows more profusely in the low lying districts, and thus the thinner honey from this plant contaminates the other.

Bee Lover (Teignmouth).—*Bees Working in Late Autumn.*—It only shows the good condition of your stocks, and the lateness of the season. You will have to take care that the food is renewed when required. Strong stocks, such as yours, if well provisioned, should come out in spring in good condition.

Interested (Lutterworth).—*Stock Short of Food.*—The quantity of food your bees have is not nearly enough for their needs. If you have a couple of frames of sealed stores, these could be inserted near the centre of brood-nest. If not, take out two or three empty combs and pour thick, slightly warm syrup into them. Then put on the feeder with warm syrup in it. This should be done in the evening. If they take this down, place a cake of soft candy over the feed-hole and wrap down warmly. You will have to renew the candy during winter, as it is consumed by the bees.

Mel (Cardigans.).—*Utilising Last Year's Honey.*—We presume the honey is granulated. It will have to be reliquefied by placing the crock in a vessel of hot water. It will take some time to reliquefy in one lot, so you might put a smaller quantity into a more convenient receptacle for melting in the same way. We should not advise mixing it with this year's honey as the quality may not be the same; also there would be no advantage in doing so.

E. F. L. (Lee).—*Sowing Clover.*—Your best plan would be to obtain the name of some local farmer who grows clover for seed. You might try Sutton & Sons, of Reading, or Ryder, of St. Albans.

W. J. S. (Colchester).—*Enamelling Inside of Extractor.*—If you use a good white bath enamel, and let it thoroughly dry, no harm could result. If you paint it now the extractor will be free from smell before you want to use it again. You will also have to be careful to examine the machine at the end of each season, and re-enamel any parts where it has been knocked off.

A. G. M. (Mitcham).—*Cleaning Hives.*—As you are so inexperienced, it will be best for you to let the hives alone, beyond seeing that the bees have ample stores for winter. Next spring you can clean the hives properly.

M. P. H. (Hayle).—*Débris on Floor Board of Hive.*—The material is from the quilts, which, if examined, will be found to have been gnawed by the bees. Use a calico quilt upon the frames and the woollen ones over it, as bees are not so liable to gnaw this material.

J. Guy (Larne).—*Varieties of Bees.*—One sample of bees is British; the other hybrid Ligurians.

J. E. J. (Pontardulais).—*Position of Wings in Healthy Bees.*—It is certainly not an absolute sign of disease. Bees with the posterior wing protruding in the way you describe may often be observed. We have to-day been looking at bees situated miles away from any known case of "Isle of Wight" disease, and found a number in the position you mention.

Honey Samples.

J. W. (Carnarvon).—The honey is foreign, in our opinion, and is a very poor sample indeed. It is not worth more than 3d. per lb. We cannot say what source it has been gathered from. It is very difficult to determine even from an examination of the pollen grains.

E. T. (Bootle).—A thin honey of fair flavour, aroma and colour, but it is not a good table honey.

R. G. (Norwich).—A sample of very dark honey of very poor quality. It has been gathered from flowering shrubs, probably rhododendrons, but it also contains honey dew. There is no trace of lime honey in it.

Suspected Disease.

J. G. (Budock).—The bees have "Isle of Wight" disease.

C. B. (Ashford).—There is no disease; the bees simply want food.

B. J. M. (Norwich).—The bees show slight signs of "Isle of Wight" disease.

Mack (Wilts).—The bees were too dry for examination, therefore we cannot state cause of death.

Special Prepaid Advertisements

Two Words One Penny, minimum Sixpence.
Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1*d. per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3*s. per* ½*in., or* 5*s. per inch.*

PRIVATE ADVERTISEMENTS.

EXTRACTED ENGLISH HONEY, 14s. 6d. 28lb. tin, 56s. cwt.; sample, 2d.—DUTTON, Terling, Essex. v 88

MOTOR BICYCLE, Antoine engine, splendid order, magneto ignition, Chater Lea frame, good tyres, £12; exchange for value bees, hives.—LESLIE ROBERTS, Birks House, Holmfirth, Huddersfield. v 87

WANTED, several secondhand divisible brood chamber hives.—Price and particulars to Box X., "B.B.J." Office, 23, Bedford-street, Strand, W.C.

IF Mr. A. Elkins will send his address to R. Dutton he will receive a reply.

THREE single-walled hives, painted, splendid condition, 12s. 6d. lot, or exchange gramophone records.—JULIAN LOCKWOOD, Hunstanton. v 86

WHO wants "Gleanings," 1911, 1912, complete, 5s.; bundle "B.B.J.'s," 1s.?—BOWEN, expert, Cheltenham.

2¼ CWT. EXTRACTED HONEY, granulating, 56s. cwt., tins free.—SHARP, Cockfield, Suffolk. v 82

PURE HONEY, in ½ cwt. tins; sample, 2d.—H. T. WRIGHT, Avenue Apiary, March. v 81

CIRCULAR saw bench, on strong iron stand, rising, planed iron top, two 12in. saws, two 7in. cast steel grooving saws, two fences, heavy fly-wheel, and treadle, large fast and loose pulleys for power, belt shifter, almost new condition, cost complete over £16; also geared extractor (Meadows), takes four shallow frames, capital condition; what offers for above?—SOAL, Rochford, Essex. v 80

WANTED, quantity Scotch clover honey at once; send sample, stating terms.—C. VAN DE RYDT, 5 Exchange-street, Dundee. v 83

LIMNANTHES.—Thousands for sale, good, strong plants, 9d. 100, post free.—R. LITMAN, Castle Cary. v 84

GRAND STOCK, in heather hive, 25/-; three 4-frame nuclei, 7s. 6d. each.—WALLACE, Bramhall, Cheshire. v 66

CAMBRIDGESHIRE HONEY, 28lb. tins, 15s.; sample, 2d. stamps.—G. MILLIS, Hills-lane, Ely, Cambs. v 76

WANTED, good sections and extracted honey; also a few heather sections.—Particulars to DELL'S, Leigh, Lancs. v 74

FINEST EXTRACTED HONEY, light, and good flavour, chiefly clover, 58s. per cwt.; sample, 2d.—SIMCOX, 17, Victoria-road, Fallings Park, Wolverhampton. v 68

OWING TO REMOVAL.—For sale, good healthy stocks English bees; also empty hives; references to former customers as to quality; small quantity heather honey.—BRADSHAW, Allerston, Pickering. v 61

IRISH HONEY, sections, and jars, for sale.—CRAWFORD, Apiaries, Castlederg, Co. Tyrone. v 37

FINEST CLOVER HONEY, 60s. cwt.; sample, 3d.—BUTTON, Manse Cottage, Haverhill, Suffolk. v 57

PURE DEVONSHIRE HONEY, 28lb. 15s., lever tins free.—BARFIELD, Gaddon, Craddock, Cullompton. v 47

COMPELLED to give up owing to the adjoining property built on; three stocks (White Star) empty hives, drawn out brood frames, excluders, &c.—Particulars from HOULISTON, Oak Villa, Whalebone-grove, Chadwell Heath. v 43

WANTED, an emasculated black Persian kitten.—Box 4, "B.B.J." Office, 23, Bedford-street, Strand, London, W.C. v 88

WANTED, cloth bound copies of 1st, 2nd, 3rd, 4th, and 5th editions of "British Bee-keepers' Guide Book."—Price and particulars to HERROD, "B.B.J." Office, 23, Bedford-street, W.C.

BUSINESS ADVERTISEMENTS.

RANDELL'S "I.O.W." cure, giving unbounded satisfaction, simple and effective, best remedy on market, 2s. 6d. per pint. RANDELL, Ixworth.

THREE tons finest clover honey, 56lb. tins, 56s. cwt.; sample, 3d.; half ton carriage paid.—T. STAPLETON Gwinear, Hayle, Cornwall. v 85

"I.O.W." CURE, giving splendid results, 1s. 6d.; antiseptic balls, 6d.—BOWEN, expert, Cheltenham.

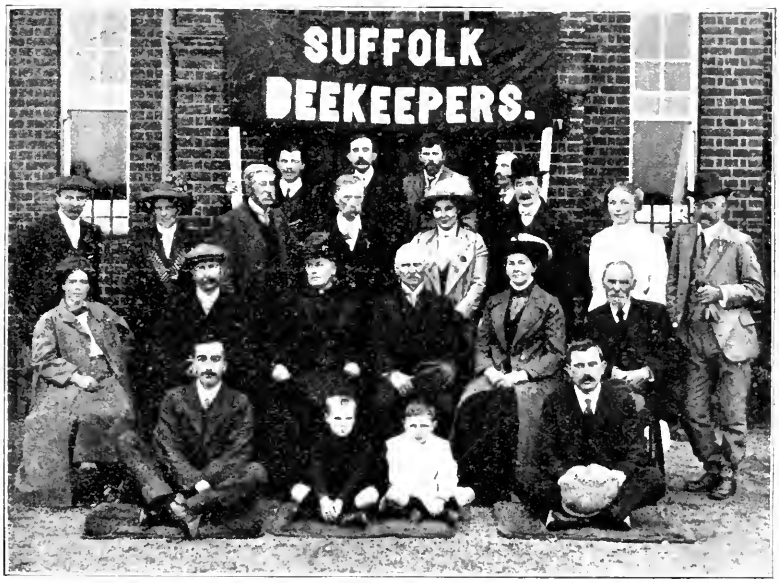
Editorial, Notices, &c.

THE SUFFOLK B.K.A.

A good deal of spade work has been done to resuscitate interest in bee-keeping round about Ipswich during the past few months, and the large number of bee-keepers who gathered at the Town Hall on September 23rd to hear a lecture by Mr. W. Herrod shows that the Suffolk B.K.A. is on a sound foundation, and once more going ahead. Mr. Oliver Jones, who has taken up the dual offices of honorary secretary and treasurer, is largely responsible for this state of affairs. In the unavoidable absence of the President of the Association, Captain E. G. Pretyman, M.P., occupied the chair. He was supported by Messrs. J. B. Chevallier, J. A. Smith, Edgar Mayhew, W. Hudson, Lady Farren, Mrs. S. R. Sherwood, and many others.

Captain Pretyman was accorded a hearty reception, and having expressed pleasure at being present, said there were many difficulties to be surmounted in connection with bee-keeping, and therefore considerable benefit was to be obtained from joining the Association, so that what one got to know was passed on to others. On entering the room he told their lecturer that doubtless he knew everything about bee-keeping, but Mr. Herrod replied that the more he learned about the subject the less he found he knew. It recalled, said Captain Pretyman, the pregnant words of Rudyard Kipling, "Humble because of knowledge," which were not only true of bee-keeping, but of everything else as well. Their membership was now over 200, and there were 1,600 hives of bees. Other things could be said of the Association, but no doubt all present were, like himself, eager to hear the lecture by Mr. W. Herrod.

The lecturer at the outset spoke of the pleasures of bee-keeping. Town people he had found were more observant of country life than people who had spent the whole of their lives in the country. The same thing applied to bee-keeping. It was not sufficient that an enthusiast should buy and read a guide-book, and think he had learned all he could of the subject: it was necessary that the closest attention be paid to the life of the bees if good results were to be obtained. Another point was that one should have a knowledge of bee diseases. At one time fruit growers told them that bees were a nuisance, but for some time past the view had been generally accepted that bees were friends and not enemies, of the fruit grower, as well as the farmer. A profit could be made in the production of honey. In Suffolk they produced some of the best honey in Great Britain, but several Suffolk bee-keepers had complained that a market could not be found for their produce. They could not get coal consumed on a coalfield. Suffolk bee-keepers, he felt assured, would find no difficulty in selling their honey if they sent it away to other markets. There was a good deal of doubt in the minds of some bee-keepers about which was the best race of bees. Person-



SUFFOLK BEE-KEEPERS AT MR. O. C. JONES' APIARY, IPSWICH.

ally, Mr. Herrod said, he thought British bees to be the best. They were indigenous to the country, and not so susceptible to disease as many varieties imported from foreign countries. The lecturer went on to speak of the best way to dispose of wax and other products in connection with the industry.

The latter part of the meeting was taken up by questions. In reply to Captain Pretyman, the lecturer said at present little could be done to mitigate "Isle of Wight" disease amongst bees. Notifications of the disease had been received from practically every county. Nevertheless, if bee-keeping was to progress they must have legislation. They could not control the flight of bees, but they could control the spreading of disease. They wanted to be able to compel a keeper to destroy bees once they were officially certified to be infected.

Captain Pretyman thanked the lecturer for the information he had furnished on the subject, and asked to be personally acquainted with any parliamentary steps the British Bee-keepers' Association was taking in connection with the subject to enable him to help.

On the proposition of Mr. J. A. Smith, seconded by Mr. Edgar Mayhew, the lecturer was cordially thanked, and a similar vote to the Chairman was proposed by Mr. Herrod, and seconded by Mr. J. B. Chevallier. Captain Pretyman and Mr. Herrod made suitable acknowledgment.

During the afternoon a number of bee-keepers had been invited to meet Mr. Herrod at the apiary of the Hon. Secretary, and those who availed themselves of the invitation spent a most enjoyable afternoon amongst the bees. Our photograph shows a group, with Lady Farren third from the left in the second row, J. B. Chevallier, Esq., J.P., C.C., next, while the Hon. Sec., Mr. O. C. Jones, is seated at the extreme right on the ground with the County Expert, Mr. W. G. Goddard, just behind him. The other photograph shows Mr. Herrod examining a lady candidate for the preliminary certificate.

EXAMINING A CANDIDATE FOR B.B.K.A. PRELIMINARY CERTIFICATE.

RANDOM JOTTINGS.

By Charles H. Heap, Reading.

NOVEL CLAIMS FOR THE SKEP.

I did not write *at* Mr. Crawshaw when, a short time ago, I alluded to skeps, but as he has put on the cap and as it seems to fit him so nicely, he may as well wear it. Other candidates for the cap are Mr. G. G. Desmond and Mr. Herbert Mace. Mr. Mace says little more than ditto to Mr. Crawshaw, but Mr. Desmond makes for the skep the remarkable claim that it

is a promoter of insect economy, as if the bee were not an economist already. The claim is both interesting and novel, but I am afraid it is based on a fallacy. Evidently, Mr. Desmond has overlooked the not unimportant fact that bees, unlike some members of the human family, do not live to eat but eat to live. Of course, some strains of bees have the honey-gathering quality better developed than others: but I think it will be difficult to make out a case showing that, under normal and similar conditions, consumption of a greater quantity of food is necessary to keep one strain of bees alive than another. No labour, as the term is usually understood, is undertaken in the hives during the winter, so that the maintenance of a life-sustaining temperature is all that is required. Bees are ordinarily so economical in the use of stores and labour that it can hardly be supposed that they will consume more honey than necessary in order to increase the temperature by a few degrees so as to make themselves specially comfortable.

Supposing that one colony in an apiary consumes more stores than another of similar size, some physical cause, or causes, beyond the control of the bees may usually be found to account for it. In a thick, warm hive, for instance, the bees would consume less honey than in a thin, cool hive of similar size; but the character of the bees is not changed. They are not more thrifty than they were before. I have seen and heard of so many cases of death from starvation in hives (skep and frame) lightly provisioned that I should like to know how and when the weights of these "thrifty" 10lb. and 12lb. skeps were obtained, and also when feeding ceased in the old year, or was renewed or begun in the new. What apiarist, I should like to know, who values the lives of his bees and understands his business, would expect a normal colony to live for seven months on 10lbs. or 12lbs. of honey, and raise the usual quantity of brood in the later months?

Mr. Crawshaw asserts that the skep is pretty well fool-proof. I note the qualifying adverbs, but I do not agree with the statement for all that. Except that the combs cannot be removed from the skep and returned with the possibility of the queen being destroyed, I can think of no way in which anyone given to playing the fool with bees may not do so as well with a skep as with a frame-hive. I have known swarms to be put in skeps and placed permanently on grass or the bare earth: I have known the large feed hole in the top of a skep to be left open in cold weather, and I have known a strong colony of bees to be driven from a skep at the end of May to strengthen a poorer stock, the brood left to perish, and the bees in this and the surrounding apiaries permitted to rifle the foul-broody combs of their sweets, with which they carried off the life-destroying bacteria. It would also be possible to destroy all the queen-cells in a skep and to kill the old queen as a swarm was being returned, an error of which novices are sometimes guilty.

The inference that may not unfairly be drawn from Mr. Crawshaw's observations is that skeps are the proper hives for fools to adopt. But do we want fools in the bee-keeping industry? None of the bee-keepers interested in the pursuit whom I have met have any love for the apiarian fool, who usually makes successful apiculture difficult or impossible to those around him. I do not say that every man who keeps bees in skeps is a fool; I am only thinking of the kind of people Mr Crawshaw had in mind when he evolved the new description of the straw skep. Perhaps Mr. Crawshaw will, for the benefit of the bee-keeping world, enumerate the respects in which the skep is "pretty well fool-proof."

Mr. Crawshaw also has a tilt at the often expressed statement that the skep is a "sealed book." He thinks it is not sealed to a really practical man "whose incidental liberty should not be unreasonably prescribed." Of course, the state of the combs and their contents may be accurately ascertained if, as Lieut.-Col. H. J. O. Walker puts it, the bees are driven and the combs cut or broken out. But how many skeppists would approve of such drastic examination methods? It will also be interesting to know how, without removing a comb, he hovers over the leaves of "the sealed book," and how, for instance, he detects, or would detect, a slight case of odourless foul brood when the dead larvæ are far from the bottoms of the combs.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE EXPERT ON TOUR.

[8846] The articles from the pen of your valued contributor, Col. Walker, are always interesting, instructive, and a pleasure to read, that on "The Duties of an Expert on Tour" being no exception to the rule. He invites criticism, but that would be out of place in the case of such a carefully thought-out article.

I would, however, like to make good one

or two points he has missed. The first is that an expert on tour should not use his own appliances unless absolutely obliged to do so, but request the loan of those of the bee-keeper. This, and the owner doing the manipulations himself, has been my practice for years, and disarms all suspicion of carrying disease.

The other point is the personal comfort of the expert. The nature of his work compels the use of a cycle of some kind, therefore, to prevent catching a chill by standing to manipulate while over-heated through riding, a woollen sweater should be worn. This garment also has the advantage of being close-fitting, thus when the coat is removed there is little fear of the clothes coming into contact with the combs.

I was pleased to see that Col. Walker laid stress upon the necessity for removing propolis from the fingers before disinfection. Carelessness in this respect has, in my opinion, been the cause of the spread of disease in many instances. Also, if an outbreak of disease is reported, the expert should visit personally, not send a substitute or a long list of questions on paper to be answered by the bee-keeper. The latter savours too much of Government officialism.

I am pleased to see the stand he takes with regard to skeps. I go further, and say that no self-respecting Association should employ an expert who encourages in any shape or form the use of the skep or box-hive.

On one point only can I take exception to Col. Walker's remarks. It is impossible for the expert to name the *hour*, and very difficult to fix the exact *day*, upon which the visit is to be paid. Climatic conditions, and inability to gauge the amount of work to be done for each member visited, are the factors which prevent this. When notification is received of the visit, the bee-keeper should help by leaving full instructions of his requirements, so that if the expert calls in his absence he can get on with the work without hindrance.

Another duty of the expert should be to visit every non-member bee-keeper possible, and get him to join the Association. Even if averse to doing this, a little tact and help with his bees will bring him round in time.—An Old Hand.

ROSS-SHIRE NOTES.

[8847] *The Season.*—Reports from various quarters indicate that 1913 has been extremely favourable to Northern bee-keepers. Some have proclaimed this the best of all good seasons, but in our district, at least, 1911 was even better. In that year my best Italian stock gave 180 sections, while on this occasion a Carniolan was first with 150lbs. Only one other colony reached the three-figure mark with me, and the rest fell far below it. A noticeable point was that several stocks put almost their total gathering in the supers, and had to be supplied with artificial stores. Yet in an adjoining district I have seen brood-combs absolutely blocked with honey, and that after the removal of a large surplus.

Swarm Control.—My one and only swarm of the season was headed by a two months old Banat queen, but the fault was a cramped brood-chamber.

Swarming is, however, the besetting sin of the otherwise perfect Carniolan bee. My own experience is that it requires two successive manipulations to eradicate the swarming fever inherent in this variety.

An examination on the eve of the honey-flow revealed queen-cells in all stages of development, so the Carniolan colony was promptly shaken on to ten frames of foundation, and one containing a patch of brood. Two weeks later, outside observation suggested that there was trouble brewing, and another dissection showed a full brood-chamber and a second batch of queen-cells under way.

The colony was again shaken, on shallow extracting combs this time, and no further trouble was experienced. Instead of endorsing the usual opinion as to Carniolans being hopeless, I should rather plead for special treatment in the management of this prolific race.

In the above instance the removed brood was used for making increase, but this, although practicable, might not always be desirable. But the same end can be attained by means of the "alternating" hive. A modification of the "divisional" hive with two brood-chambers used *alternately* gives sufficient scope to the most prolific queen, besides ensuring an extra large population for the last stand among the heather.

Heather Honey.—This delicacy, although popularly credited to Scotland, is produced by bee-keepers all the way between Land's End and John o' Groats. Some years ago these columns witnessed a warm discussion as to the respective merits of heather honey produced north or south of the Border. Here, again, we make a distinction between Southern Scotland's heather honey and the product of the Highland hills. And, finally, even in the Highlands we have two distinct varieties of heather honey. One takes the palm for consistency, as the comb can be cut or broken without losing its jelly-like contents. The other kind is less dense, but decidedly more aromatic. Personally, I think the thick, mild-flavoured honey is best, but my customers, as a rule, prefer the other, even at a higher price. Even in this year of plenty I have got up to 1s. 6d. per lb. for the rich-flavoured type,

while the milder honey went at 1s. to 1s. 3d. No doubt it is all a matter of taste, and depends on whether the consumer prefers consistency to aroma or *vice versa*. However, I am sending a sample of each kind to our Editor, and await with much interest his decision as to which is really the better honey.—J. M. Ellis, Ussie Valley.

[We prefer the thick milder flavoured honey.—Eds.]

TREATING "ISLE OF WIGHT" DISEASE.

[8848]—My experience in trying to deal with the "Isle of Wight" disease may be useful to others troubled in the same way. Having two hives which showed undoubted signs, I was advised to use Ayles' cure, which, being largely creosote, gives off a very decided odour. I painted an empty hive, and when quite dry duly transferred my best stock into it without great trouble, although one frame needed tying together before removal and some comb attached to the sides had to be cut away. Of course this caused some little honey to run down on to the floor-board of the new home after our removal. I took the old hive into the house and thoroughly scraped it clean before painting it with Ayles' cure. After painting I left it indoors till next day, when I put it out to dry. In spite of the creosote some bees hung about it all day long. On the second and third days I found great commotion and apparent robbing at the new hive, but as the stock was a strong one, thought they could resist attack, and the abnormal heat prevailing was the cause of the crowd. The entrances were closed, and there appeared to be no fighting. But to my astonishment, on the third evening, an hour after other hives had "gone to bed," this lot was still very busy and all going out in one direction. I then discovered that the bees were not of the same colour as mine, and on opening the hive saw that the combs were quite cleared out of stores. I estimate 20lb. had been taken in three days, and my bees were practically starving.

I have since been told that in consequence of the smell of the creosote, my bees were unable to detect the presence of strangers, and let them in by the hundred all day. I started feeding mine with syrup without delay, and finding the robbers still coming to take that away, have been obliged to shut the hive up each evening until about 3 p.m. next day. I reduced the frames to seven, and put in a dummy board. Twice I have cleared a considerable number of young brood from the doorway, all, no doubt, dead from starvation. I still have another hive to transfer, but am waiting for a change in the weather before doing so. Can you suggest anything else to do? I am very anxious to get my stocks through the winter.—T. K., Carshalton.

[It is curious that the condition you describe will at times follow the use of Ayles' cure. We cannot tell you of any further precaution you might take.—Eds.]

NEW USE FOR BEE-STINGS.

[8849] I was stung between the eyes the other day, and as I usually wear spectacles to read or play from music, I was agreeably surprised to find I could see quite well without glasses after the sting. I may add that my nose and face swelled a little. Perhaps some oculist could explain this?—Fred Watts, Bristol.

HEREDITY IN BEES.

[8850] I noticed with great interest the communication, from W. G. Coates (page 408) in the last number of the "B.B.J." He says that the queen he bought in 1912 was of the golden variety, and I presume, though he does not say so, a fertile queen. Now, all who work on experimental investigation of the inheritance of characters are perfectly familiar with the fact, which was elucidated by Gregor Mendel, that any fertile hybrid crossed back into the same variety, which acted as a recessive in the first mating, will produce offspring consisting of equal numbers, the one lot resembling one of the grandparents, the other lot resembling the other grandparent. Thus, if a golden bee mates with a black bee, and the resulting hybrid queen mates again with a black bee, among the worker bees there should be equal numbers of golden (hybrid) workers and black workers. The drones, which are parthenogenetic, should be also goldens and blacks, but the goldens in this case should all be pure.

I take it from Mr. Coates' letter that his queen was a cross between black and golden, and she was fertilised by a black drone. The interest of the letter lies in the fact that the queen produced a long run of black workers, then a long run of golden workers, and finally a long run of black workers. We are familiar with the phenomenon, that when equal numbers of two varieties are expected it often happens that long runs of one particular variety occur, but I do not know of any case quite parallel with the one quoted. It would be of the greatest possible interest to science if Mr. Coates could supply us with more details about his bees.

In my observation hives the queen produces drones freely if encouraged to do so, by being given a certain amount of drone comb. If Mr. Coates could arrange his hive in this way and keep a careful count

of the numbers of drones (and their colours) which hatch out, it would supply very useful information.—FLORENCE M. DURHAM.

IS "I.O.W." DISEASE CONTAGIOUS?

[8851] H. Wilcox, on page 414, says: "Personally, I think not." I disagree, for, as a third-class expert, I have this season seen more "Isle of Wight" disease than I could have wished to. I feel certain that if a stock of affected bees is not destroyed in the first stage, that is, before they begin to let robbers clear them out, there is grave danger of the disease spreading to the whole apiary and also to any stocks within bee flight. It has been clearly explained in the reports on "Isle of Wight" disease, issued by the Board of Agriculture and Fisheries, that it is only contagious when it has reached the spore stage, and that if the bees are heavily infected it is quite possible for them all to die before the spore stage is reached. To treat it as not infectious is running a great risk. The bees I have had to do with would not take syrup with 60grs. of sulphate of quinine to the gallon, so I cannot say if it is any good as a remedy, but nothing I have tried has had any effect in arresting the progress of the disease. The best and quickest way that I have tried of killing a stock of bees is to take an ounce of bisulphide of carbon and pour it in at the feed-hole in the quilt, then cover up close and burn the whole contents of the hive in a brisk fire on a day when no bees are flying. I have had four stocks affected in my apiary of thirty. I have treated them as above, and hope to report again in the spring as to result. The season here has not been up to last year, we had too much windy weather while the fruit bloom was out. My best hives gave two racks of full shallow frames. Sections were on the hives too long to be good.—H. W., Kent.

[8852] There are a good many items in Mr. Wilcox article (page 414) that I cannot agree with. For instance, there is no evidence that the disease chiefly attacks those stocks that have been overworked for the production of swarms or honey, and the skep people seem to have suffered quite as much as the frame-hivers. Neither do I doubt that in the main it is highly infectious. Nevertheless, here are some curious facts to add to those of Mr. Wilcox. A hive dying by inches all the summer, from May to October, and within five feet of it a swarm hived on infected frames from last year, with no disease. The same swarm robbing out a neighbour's two hives dead from the disease, and a fortnight gone by without any symptoms. Those facts apply in all their incidents to two two-stock apiaries of my close acquaintance, and I know of three more swarms and casts rather more isolated, but also robbers of hives where "Isle of Wight" disease had killed the bees, which had themselves been hived on infected combs, that also appear to be immune. I will say that the combs were treated by formalin vapour twice during the winter. Then there are three other swarms self-hived on the combs of two apiaries swept clean by the disease last year, all doing well. Two or them were at once shaken off the infected combs and hived on clean ones in clean hives, but they stand on the infected ground. An active disseminator of the disease ought to be the great tit, which feeds on the crawlers, wiping off the bowel contents on alighting-boards, hive-tops, and any other convenient place. I have seen a bee sucking at this. But enough of horrid details. Suffice it to say that some hives escape in the midst of apparently certain means of death.—G. G. DESMOND, Sheepscombe, Gloucestershire.

THE SCHOOLMASTER ABROAD!

[8853] I recently, through the courtesy of a friend, came across a literary curiosity in the shape of a "small booklet" as the author describes it. As there are only seventeen pages, and it contains about 100 distinct errors, solecisms, or incongruous and illiterate expressions, it may be gathered that the writer is one to whom my heading aptly applies. I should like to give readers a few of the tit-bits, marginally marked by my friend, because really some gems are included in the number. The "small booklet" professes to be written by Joseph Tinsley, Lecturer and Expert to the Staffordshire Bee-keepers' Association. He is also the "author" of "Contributed Articles" to your Irish contemporary. I for one would like to see MS. as handed in to the printer, with all its glaring errors corrected, but that is a treat locked up in the editorial cupboard.

I simply italicise the gems marked in the "small booklet," leaving readers to discover and appreciate the points for themselves, and direct quotations are given in the usual way to show printed matter.

"Light *run* hõney is judged on the following *basis*." "See that every *particle* of honey is sealed over before extracting." "Keeping the hive at a *great* temperature." "Gradually evaporate the moisture until the consistency is such that *it* can be covered with a waxen capping." "Where you get an exceptionally thick *sample*, there you will *always* find the other *parts* which so materially assist in

giving it the prize." "Honey, *being an oil* more delicate than milk or butter (!!) the flavour can be very easily destroyed *and often is* by the injudicious *application* of smoke or carbolic acid." "Let us imagine that we *are in* the *inside* of a bee hive." "That wonderful *roar* which is always *synonymous* with a good bee-day." "*A judges'* palate is wonderfully keen." "Try to *tone* your operations so that if either smoke or carbolic acid has to be used, the *quantity* will be so slight as to have no effect on the nectar." "Many lose points *again* on the *way* they *put* the honey in the bottles." "The bee-keeper can fill his jars with the *more denser* portion from the bottom!" "Get uniformity *both* in colour, flavour, and density." "The honey can be graded for the various classes *accordingly*." "On no account should this vile mixture (honey dew) be *contaminated with* his dark honey." "The caps, bottles, and *lids* that come into *contact with* the exhibit *being* the very *essence* of neatness and cleanliness."

"Granulated honey should, however, be stored in a *dry* place, *and* free from *damp*." "If thoroughly ripe, the *candy* condition will soon appear." "Bottle the honey with an absence of air bubbles, and *yet not to heat* the honey *to this effect*." "Bring the minute air bubbles to the *top*, which can be *taken off* before bottling." "The bottles should be thoroughly cleaned, the cork wads, *and* the metal caps *exchanged*." "Nothing has such a *detrimental effect* on granulated honey *than* dirty, *oily* caps and wads." "*Section* for the show bench." "*Excellent* filled sections may be obtained." "Sections arrive in England in *the flat with dovetailed joints*, and by *damping the corners* they can easily be folded." "The bee has to *produce* the wax in its body." "In the *fields of Nectar*." Shades of Huber! the queen is actually called "*her ladyship!*" "Dark honey generally does not present *a nice* appearance in the comb as the light, hence *the necessity to procure* the nectar from the *clover root*." "A cloth *saturated* with a weak solution of carbolic acid is the *cleanest*, &c." "The smoker is apt to *discolour* the sections." (Why?) "*Previously* to using 'the clearer' it should be completely *overhauled*."

"Wax exhibitors are few, and the reason generally *attributed* to the lack of exhibitors *in this respect* is that the work is too sticky and messy, *and often as not*, &c." "An *acquaintance* with the composition of wax will no doubt be useful to *study the question*." "Bees generating it remain in a *comatose state*." "A good sample should be pliable, *and elastic*." "Cappings should be *separated in colour*." "Wax being considerably lighter in weight *it* naturally comes to the top, while the dirt and dross *falls* to the *bottom*." "Place the capping in an earthenware *Jar* or large *Jam Jar*, and *insert into the oven*." "We *prepare further*." "Procure a piece of muslin, and rinse it *through with* hot water." "Each successive melting takes a certain amount of *nutriment* from the article." "*Insert* into a large *iron* pot, partly filled with water, *on to* a slow fire."

"The *Exhibitions* are composed of exhibits which are the *labours*, &c." "Be scrupulously clean in all the *methods*, from the picking of the cappings *to* the finished article." "Never rely on sections for *run* honey." "The *clever* divider recently designed by, &c."

"Now, mark you" (a favourite phrase of the author) I make no comment and offer no criticism. To do so would be like trying to gild refined gold, which we are told on high authority would be wasteful and ridiculous excess."—A Board School Boy.

RICHMOND AND DISTRICT BEE-KEEPERS' ASSOCIATION.

[8854] I once more trespass on your kindness in asking you to be good enough to insert a few lines in your valuable paper to assist us in raising funds in aid of the proposed apiary of the above Association, which (should funds allow) we hope to start early in the New Year, together with a small club house.

It has always been the ambition of this Association, which is still almost in its infancy, to have its own apiary and club house, where the members may have every advantage of studying apiculture, and where our experts may give advice and instruction to beginners in bee-keeping. To this end we are giving a concert on Tuesday, November 4th, at 8 p.m., in the School Room, adjoining Christ Church, Kew Road, in order to raise the necessary funds, and we appeal to all market gardeners, fruiterers, fruit growers, and farmers to assist us by sending donations or by taking tickets for the concert. Bees are so valuable as agents in fertilising the fruit bloom in spring that bee-keeping should be encouraged by fruit growers and gardeners.

I should also like to point out that Richmond and the surrounding districts are very profitable places for keeping bees, one bee-keeper registering over 200lbs of honey from one hive, and another nearly 200lbs. and several swarms from two hives this year.

Intending new members (either ladies or gentlemen) will be welcomed, and can leave their names and addresses, and ask for any particulars, at the close of the concert, from the treasurer. Donations

may be sent to the secretary, Mr. G. G. Romer, 234, Kew Road, Kew, or to the treasurer, Mr. F. Atwood, Leybourne Lodge, Leybourne Park, Kew. Tickets may also be obtained from the same.—G. G. Romer, Hon. Secretary.

BEES IN A ROOF.

[8855] Your correspondent, G. F. Scott (8835, page 417) might try sealing the holes up with mastic, mixed with oil to the consistency of putty or cement, and if the bees find another way out follow them up. We found this effective here with wasps in a similar position.—G. Moir, Cumberland.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

Do Bees Reason?—Mr. Odell, a writer in the *Review*, deals with this question and he takes the case of (firstly) bees run in to an ordinary straw skep, where they have all their building to do, from the foundation up to the finish of the last cell, with material gathered and manufactured by themselves; (secondly) bees run on full sheets of foundation, where they have simply to thin down the cell walls and draw out the construction on provided bases and with material supplied them; and (thirdly) a colony which has met with a sudden disaster involving the destruction of their habitation. He grants the constructive processes involved in comb-building in the first case "may be purely hereditary and reflex, at least it may be difficult to prove the contrary." In the second case, this introduction of the sheet of comb foundation changes all this. They do not secrete honey and manufacture wax, but simply proceed to finish the cells, something new, which, in the process, gets a step beyond reflex action—"they are conscious of the relation between means employed to ends to be obtained." The third cataclysm he compares to a town devastated by an earthquake. At first, in both cases, there is consternation, then there follows a period of doubt and hesitation, followed by clearly marked deliberation. Both bees and men start work ultimately on some well-defined plan, the solving of which, and the executing of which, involves thought and some process of reasoning by the bees as well as by the human victims of the catastrophe.

A Faithful Saying.—"This is a faithful saying, and worthy of all acceptation, 'Do your spring feeding in the fall.'" The successful wintering of the colony depends in a large measure on its having a good proportion of young bees at the beginning of winter, and to secure this, unless there is a good fall flow, stimulative feeding should be resorted to, then, with the colonies heavy with stores, and strong with young bees, you can rest easy in the spring and confidently expect strong colonies for the flow.

Thoroughness.—The following from Mr. Millen, the State Inspector for Michigan, hits the nail squarely on the head: "The safest way to sterilise the hives and all appliances that have been used in examining or treating diseased colonies is by flaming all the woodwork until charred, this after it has been thoroughly scraped in a place shut away from the bees. All the tools should then be boiled, and the hands and clothes washed free from honey. I feel confident that if only the bee-keepers would treat thoroughly the first time disease appears, and then use care in disinfecting the hives and appliances, thus disposing of disease-infected materials generally, that there would be fewer out-breaks recurring in treated yards."

Two Typical Bee-keepers.—Another inspector says: "I visited a bee-keeper whose yard was the most slipshod I ever saw; well, half his hives were diseased. When he heard I wanted him he slipped away! Another bee-keeper met me with smiling face. Everything was neat and trim. 'Got any foul brood?' I enquired. 'No,' said he, 'I have got rid of it.' Of course he had; it does not stay with such bee-keepers! A thought strikes me. Which type do some of our brave big bee-keepers belong to? I have heard stories about some of them I won't repeat.

New v. Old Combs.—At the recent Australian Conference this subject was under discussion. The writer of the opening paper declared that new combs secured better bees and more of them, as well as better honey and more of it. He pointed out that beginners with freshly built-out combs, and he, himself, when he went in extensively for renewing, had better yields per colony and a better average over the whole apiary. He thought his bees were larger and healthier, and he was certain they showed more energy. He submitted sample honey tins from each class, and the new combs gave "a clearer, brighter, and by far more attractive honey." A point on which he laid great emphasis was that renewing combs periodically meant the warding off of disease. During the discussion one or two gave old combs a word of praise as best for wintering, and best when hives were being shifted, but even they were in favour of replacing brood-combs every six or seven years. I believe strongly in gradually renewing combs, because I feel confident fresh works enable bees to keep stronger and healthier. While they are an aid to securing strong colonies, they also help in warding off disease, but when actually present in a colony, the freshest combs will not aid

one iota in curing it. In "Isle of Wight" disease, bees with combs built in the current season go under as quickly as those on combs which have done duty for many years.

Well-built Combs.—Mr. A. C. Miller, in *Gleanings*, pictures three men engaged in bee-keeping with different sized hives—an eight, a ten, and a twelve-framed standard size. One would expect that in the larger there would be far more egg-laying space, but he shows by actual measurement that in some cases at least the small one has actually *more* worker-cells than the largest! His remarks interest me, as I have seen many samples of the same in this country. The owners fondly thought that having large hives they were bound to have more bees, but yet lived to acknowledge that the smaller ones outstripped them in the race. The number of drone-cells, and those badly built, cannot be counted on for obtaining worker increase. Mr. Miller calculates that the internal space in a frame is 134 square inches, thus giving 6,700 worker-cells. In the small eight-frame hive he found seven and a half combs with cells of worker size. By measure and estimate, he calculates only seven perfect combs in the ten-frame hive, and the largest size has only the same capacity. But he finds more behind. The available actual worker-cells per frame in the three typical hives work out as follows: (*a*) 6,400 cells, (*b*) 5,950 cells, (*c*) 4,760 cells. Some, he says, blame the queens for poor results. Possibly it may be the queens, but it *may* be the combs. Many on this side might take this lesson to heart. I *know* that there is a large percentage of worse than useless combs to be found in well-regulated apiaries.

BRIEF REPORTS.

In this neighbourhood the honey-flow has suffered severely from the dryness of the season: the soil here being very light, frequent rains are essential. All my hives developed a second attack of swarming fever in the third week of July, just before the heather came in, so that I got no surplus from it. Nevertheless, I have done fairly well. Starting the year with three hives and two skeps, I have taken over 250lbs. and won seven prizes. One large *cast* I hived on June 16th, and including thirty half-finished sections from the parent hive, which I gave to the cast to finish, I have taken seventy-one completed sections from it: so the silver spoon in this case was a valuable one!—FLEET, Hants.

The first flow of nectar was very small this year in Belgium, but fortunately the bees had three weeks of fine weather after August 15th, which enabled them to store nearly sufficient for their winter supply.—A. WAUHELET, Belgium.

I have in my garden twelve standard hives, and live in a district where mustard and turnips are grown for seed, and we also grow these ourselves. These plants seem to me to produce a lot of nectar. I do not suppose it makes the best honey, but it granulates very quickly, and is very white. From my twelve stocks I sold £18 worth of honey at 6s. 3d. per dozen screw-top jars. Is this a good average for a novice?—JOHN BROWN, Thorney, Cambs.

It is characteristic of mustard honey to granulate very readily. It is honey of good flavour and much liked by many people. You should have obtained about 8s. a dozen for screw-capped jars of this honey.—EDS.]

On the whole, very good. Stocks built up quickly; queen-rearing more successful than 1912; clover-flow not good in spite of a fine show, owing to drought; best heather crop I remember. September rapid feeding absolutely necessary.—GEO. STEVENTON, Bisley.

THE "B.B.J." AS AN ADVERTISING MEDIUM.

The following extracts from letters just received speak for themselves:

"Will you please withdraw my advertisement in "B.B.J." for next week. I am pleased to say that I have quite sold out of honey, thanks to your paper.—H. A. W."

"I am inundated with orders, which speaks well for the advertisement portion of the BEE JOURNAL.—R. B."

Bee Shows to Come.

November 20th, at Bromsgrove, Worcestershire.—Annual Show of Honey, Wax, Honey Cakes, Candy, &c., will be held in the Drill Hall in connection with the Bromsgrove and District Gardeners' Association and Horticultural Society. Seventeen classes (twelve open to all). Classes for wax, honey cake, bee candy, honey sweetmeats, and honeyed fruit jelly, one for single 1lb. jar of honey. Prizes 21/-, 10/- (entry free). Entry fees in all other classes, 6d. each. Each exhibitor will receive a free admission ticket to the Show. Schedules from Arthur Aston, Cemetery Lodge, Bromsgrove. **Entries close November 6th.**

Notices to Correspondents.

A BEE-KEEPER IN THE MAKING (Westcliff).—*Starting Bee-keeping.*—(1) You could keep bees in the place you suggest. Stand the hives on the gravel. (2) Wait until about March before purchasing. (3) Yours is a fairly good district. The Secretary of the Essex B.K.A., Mr. G. R. Alder, 176, Hainault Road,

Leytonstone, will supply you with a report on application, from which you can get the names of bee-keepers near you. You would be well advised to join the Association. (4) No doubt the secretary would arrange this if you became a member as suggested. (5) No. Commence with a swarm.

A. T. J. (Manningtree).—*Artificial Swarming.*—Your plan will work all right. Do not forget to feed the nuclei and swarm if the weather becomes bad. Sladen's "Queen-rearing in England" is a very useful book.

R. Barnes.—*Combs from Diseased Stock.*—(1) We should not risk using the combs again. Melt them down and burn the frames. (2) Buy bees in your own neighbourhood if you can, they are more likely to be immune.

Disgusted (Staffs.).—*A Strange Way of Stopping (?) Robbing.*—The statement you send from Bee-keeping Notes in the *Lichfield Mercury*, which reads:—"I find a liberal supply of paint on the alighting-board to be one of the best means of clearing robbers away. The smell from the paint neutralises to a great extent the scent of the honey. It may be found necessary to sprinkle a weak solution of carbolic acid also," is worthy of the days of the inquisition, and shows great ignorance on the part of the writer. We hope the advice was not followed, as instead of stopping robbing it would be the means of killing scores of bees, as they would stick fast in the paint. We are sorry we cannot tell you what a "Technical Honey Show" is.

Honey Samples.

J. A. (Greenock).—There is no trace of heather whatever about the sample sent. It is, in our opinion, an inferior foreign honey, rank in flavour, and of thin and watery consistency. We wouldn't give 1d. per lb. for it, and nothing can be done to improve it. The only safe way of buying honey is to get a sample, and purchase through our Deposit System.

G. M. (Ely).—A beautifully granulated light honey of good flavour and aroma, gathered mainly from charlock.

E. M. S. G. (Staffs.).—No. 1 sample is a very good light clover honey, worth 60s. per cwt. in bulk. No. 2, an excellent heather blend, the heather flavour predominating; worth 60s. per cwt., or 1s. per jar retail.

H. E. P. (Pwllheli).—A very good heather blend.

E. B. (Bradninch).—A granulated honey mainly from clover. Nice flavour and aroma, but rather coarsely granulated: worth 60s. per cwt. in bulk.

R. G. (Bodmin).—A very nice light honey, good in colour, flavour, and density. It would be improved by restraining, as there are small particles of wax in sample sent. Should sell at 60s. per cwt. or upwards.

F. B. (Dunmow).—Your sample is of fairly good flavour. It is from mixed sources, but contains a little honey-dew. It is quite fit for household use.

F. Bean (Snaith).—A rather poor heather blend honey, thin in consistency, and of cloudy appearance; not worth more than 5d. per lb. Would do for feeding bees if previously boiled.

Suspected Disease.

A. G. T. (St. Nicholas).—The comb contains nothing worse than pollen.

E. H. W. (Stoke Poges).—The bees show signs of "Isle of Wight" disease.

F. A. (Putney).—The bees have "Isle of Wight" disease. No charge is made for examining bees.

Special Prepaid Advertisements

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

HONEY, superior, 28lb. tins, 60s. per cwt.; sample, 2d. JOHN HANNAM, Stourton Farm, Stourton, Wilts. v 1

HIVES and APPLIANCES for sale, through removing to town.—Particulars of ADAMS, 14, West-avenue, Clarendon Park, Leicester. v 94

WANTED, Cowan 2-frame extractor, geared, perfect condition.—E. RACKE, Clungunford House, Aston-on-Clun, Salop. v 3

FOR SALE, ½ cwt. pure English honey, light, 1½ dozen sections.—LAW, Cuckoo, Ashwell, Herts. v 2

HEATHER SECTIONS, first grade, 16s.; seconds 14s.; thirds, 12s. dozen; delivered.—NICHOLSON, Langwathby. v 100

BEE-KEEPERS requested compete prizes, 20s. single bottle honey, Ipswich Show; exhibits presented hospital later.—Apply schedule, OLIVER JONES, Lattice Barn, Ipswich.

1½ CWT. medium coloured honey, in 28lb. tins, 15s. each; sample, 2d.—MARRIOTT, Black Notley, Braintree. v 98

FINEST Scotch clover honey, in 28lb. tins, at 16s. each, tins free and f.o.r.; samples, 3d. HENRY GOW, Crossford, near Dunfermline. v 97

SUPERB COTSWOLD HONEY, 8s. 9d. dozen bottles.—BOWEN, expert, Cheltenham.

15 CWT. good honey for sale, 60s. cwt.; sample, 2d.—E. BLACKMORE, Haithaies, Bradninch, Devon. v 95

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at the Lecture Hall, Zoological Gardens, London, N.W., on Thursday, October 23rd, 1913. Mr. W. F. Reid presided. There were also present Miss M. L. Gayton, Miss M. D. Sillar, General Sir Stanley Edwardes, Sir Ernest Spencer, Col. H. J. O. Walker, Messrs. A. G. Pugh, O. R. Frankenstein, R. H. Attenborough, Thos. Bevan, J. N. Smallwood, C. L. M. Eales, E. Watson, J. B. Lamb, H. P. Perkins, and A. Richards, Association representatives: W. T. Saunderson (Northumberland), G. H. Garratt and E. W. Franklin (Cheshire), G. Hayes (Notts.), Rev. F. S. F. Jannings (Yorkshire), G. J. Flashman (Barnet), W. Young (Olney), J. P. Phillips (Worcestershire), J. Waterfield (Leicestershire), Col. H. F. Jolly (Somerset), G. W. Judge and G. Bryden (Crayford), F. W. Harper (St. Albans), G. R. Alder and G. Faunch (Essex), D. Seamer (Lincolnshire), and the Secretary, W. Herrod.

Letters expressing regret at inability to attend were read from Miss H. Inglis, Messrs. T. W. Cowan, L. E. Snelgrove, E. Walker, C. L. Pinker, Captain F. Sitwell, and Rev. G. E. H. Pratt.

The minutes of the Council meeting held September 18th, 1913, were read and confirmed.

The following new members were elected: Mrs. M. A. Tasker, Miss C. Redfearn, Miss E. Dowding, Miss C. Johnson, Dr. H. P. Hallows, M.D., F.R.C.S., Mr. S. H. Davis, Mr. G. Schiller, Mr. J. W. Wilson, and Mr. A. B. Mogg.

The report of the Finance Committee was presented by Mr. Smallwood, who stated that the payments into the bank for September amounted to £18 17s. 5d.; the bank balance at the end of September was £134 13s. 6d.

Reports on Preliminary examinations held at London, Bentham, Ipswich, and Gloucester were presented, and it was resolved to grant certificates to the following: Mrs. E. M. Sherwood, Misses L. Row, M. E. Connell, A. Carr, and M. Empson, Messrs. J. Nickalls, J. Jay, F. S. Elliott, W. Brown, J. Brown, L. T. Bird, F. Newsham, John Carr, W. Carr, James Carr, T. Proctor, M. Proctor, R. Jackson, G. C. Langston, W. J. Goodrich, H. Rogers, J. W. Watkins, and Rev. F. H. Fowler.

The alteration of Clause (b) of examination regulations was discussed, and it was resolved that it remain as printed in the regulations issued on May 15th, 1913.

The day of the week for holding Council meetings was voted upon, and the majority were in favour of Thursday.

The judges for the Royal Show, recommended by the Exhibitions Committee were accepted and appointed as follows: Messrs. W. F. Reid and A. G. Pugh, Rev. T. J. Evans, Rev. G. E. H. Pratt. Reserve, Mr. J. P. Phillips. Steward, Mr. S. Cartwright.

Next meeting of Council, November 20th, at 23, Bedford Street, Strand, London, W.C.

The report of the conversazione which followed immediately after the Council meeting is unavoidably held over until next week.

THE DAIRY SHOW.

The Dairy Show, held at the Royal Agricultural Hall, London, on October 21st to 24th, was a remarkably successful one in many ways; while in the case of the commodity with which we are particularly concerned, viz., honey, the entry is the largest for the past seven years.

The quality of the honey and wax staged was excellent, and though only two competitors were represented in the Trophy Class, we have never seen more beautiful honey displayed in more dainty and attractive form. Mr. E. Walker judged the exhibits and made the following awards:—

Twelve Jars of Light-coloured Extracted Honey.—1st, William Abram, Moss Side, Banks, near Southport; 2nd, W. H. Allard, Poors Plot Farm, Stockton, Rugby; 3rd, W. Patchett, North Wold Apiary, Cabourne, near Caistor; 4th, E. C. R. White, Newton Toney, near Salisbury; r. and v.h.c., Messrs. J. Lee and Son, Ltd., George Street, Uxbridge; v.h.c., A. MacCullah, Webberton, Dunchideock, near Exeter; A. C. Jackson, 103, Chalk Hall, Elveden, near Thetford; F. W. Frusher, Swiss Apiary, New Road, Crowland; h.c., T. G. Hillier, Hurstbourne Tarrant, Andover; S. Cartwright, Shawbury, Shrewsbury; W. B. Allister, Throckenholt, Wisbech; W. H. Stoppard, The Brook, Tiptree, Essex; c., Richard Allen, Tusmore Park, Bicester; S. Saunderson, West Wrattling, Cambs.

Twelve Jars of Medium-coloured Extracted Honey.—1st, W. B. Allister; 2nd, S. Saunderson; 3rd, C. E. Billson, Cranford, near Kettering; 4th, E. C. R. White; r. and v.h.c., C. H. F. Rose, 159, Blagdon Road, New Malden, Surrey; v.h.c., F. W. Frusher; c., Albert MacCullah and J. Pearman, Penny Long Lane, Derby.

Twelve Jars of Dark-coloured Extracted Honey.—1st, J. Pearman; 2nd, Lady Gertrude Crawford, Coxhill, Lymington, Hants; r. and v.h.c., A. MacCullah; c., Walter Beken, Mount View, Biddenden.

Twelve Jars of Heather Honey.—1st, J. Pearman; 2nd, M. J. Lamboll, Chiddingfold, Surrey; 3rd, J. T. Duckmaston, Gate Hotel, Langwith, Mansfield.

Twelve Jars of Granulated Honey.—1st, F. W. Frusher; 2nd, Richard Allen; 3rd, J. Pearman; r., W. H. Allard; v.h.c., Arthur Ross, 34, Alexander Street, Bayswater, W.; h.c., J. Mackenzie, Strethall, near Saffron Walden, Essex, and W. Beken; c., A. MacCullah.

Twelve 1-lb. Sections.—1st, James Lee and Son; 2nd, J. Pearman; 3rd, C. W. Dyer, Compton, near Newbury.

Six Sections of Heather Honey.—1st, J. M. Balmbra, East Parade, Alnwick; 2nd, Henry Waddington, Kirby Hall, Borobridge, Yorks; 3rd, A. MacCullah.

Display of Comb and Extracted Honey of Any Year.—1st, James Lee and Son; 2nd, J. Pearman.

Beeswax.—1st, W. Patchett; 2nd, Miss K. E. Harwood, Old Sarum House, Stratford Road, Salisbury; 3rd, E. C. R. White; v.h.c., J. Pearman; h.c., T. J. Hillier and A. MacCullah.

Beeswax (not less than 3-lbs.).—1st, J. Pearman; 2nd, A. MacCullah; 3rd, G. W. Goodburn, Church Street, Oakham, Rutland.

Interesting and Instructive Exhibit of a Practical or Scientific Nature.—Dairy Supply Co., Ltd., 28, Museum Street, London, W.C.

REVIEWS OF FOREIGN BEE JOURNALS.

By "Nemo."

What is the Reason for Poor Honey Harvests?—There is an article in the *Deutsche Illustrierte Bienenzeitung*, by C. J. Maak, dealing with this subject, in which he points out that in giving bees so much sugar syrup bee-keepers are working against nature. From the numerous complaints of bee-keepers that their returns are very poor, it is evident that the right system of managing bees has not yet been discovered. At present, not only is sugar syrup used for completing winter stores, but it is also employed for stimulating bees in spring, feeding both natural and artificial swarms, and in queen-rearing. We are living in an age when natural products are discarded in favour of the artificial products of man. M. Maak points out that it is true that the principal components of honey are water and sugar, but flowers contain in their nectar, as science has demonstrated, in addition the following substances:—Pollen, etherial oils, tannin, several alkalis, phosphates, manganese, nitrates, silicates, sulphur, lime, iron and others. It will therefore be seen that bare sugar syrup is an incomplete and, therefore, inappropriate food. In consequence of this present-day practice bees are bound to degenerate, and it is only to be hoped that this degeneration has not gone too far. The remedy for this is the supply of natural stores, or a composition containing the ingredients of honey, and it will be only then that we can expect a healthy race of bees.

Production of Honey and Wax in Chile.—We find in *Nachrichten für Handel, Industrie und Landwirtschaft* that the amount of honey and wax produced in Chile, and exported from Valparaiso, amounts yearly to from 13,000 to 14,000 barrels of honey, and 90,000 kilos of wax.

Cav. Andrea de Rauschelfels.—This veteran bee-keeper, who was the able editor of *L'Apicoltore* for twenty-five years, has recently, at the age of eighty-five years, retired from the editorship of this paper. To the very last he preserved his vigour, and although he was brought up in the German school, and for many years was in favour of the narrow vertical hives, he latterly found that the horizontal hive was superior, and advocated that known as the Dadant hive. He was born in 1828 at Lienz in Austrian Tyrol, and after serving in the army he retired in 1852, and settled in Italy. In 1869 he commenced bee-keeping with six colonies of bees, and in course of time had as many as 200 colonies. He contributed articles to German papers and to *L'Apicoltore*, becoming its editor in 1888. He advocated simplicity and economy, believing that many of the appliances recommended were unnecessary, and were better dispensed with. From 1871 to 1873 he contributed articles to the *Bolletino del Comizio Agrario di Parma*, and in 1878 he compiled together with Cav. L. Sartori, a book entitled "L'apicoltura in Italia," and in 1901 he bought out "L'Ape e la sua coltivazione." The Italian Bee-keepers' Association has appointed V. Asprea as editor. He has for a long time contributed to *L'Apicoltore* reviews of foreign bee papers, and is an able writer, so that there is every prospect of the useful and progressive work of this journal being continued.

Number of Hives in Germany.—According to statistics published in the *Elsass-Lothringischer Bienen-Züchter*, the number of hives of bees in the German empire, as returned after the census of last December, was 2,619,891, and as it was 2,594,690 in 1907, when the previous census was taken, it shows an increase during that time of one per cent.

A Strange Bee Journal Editor.—Under this heading we mentioned, on page 42, "B.B.J.," 1912, that the Court of Justice in Hamburg had fined a manufacturer of fruit sugar, named Frohloff, £60, and one hundred days' imprisonment, and the

remarkable thing in the trial showed that M. Kuchenmüller, the editor of the *Constance Bee Journal*, was in league with the adulterators, and had received 10,000 marks (£490) to support in his paper the fraudulent trade of Frohloff. An appeal was lodged, and on re-trial Frohloff was fined 1,500 marks (£180) in addition to an indemnity of 10,000 marks, which he had to pay to a merchant who had sued him in a Civil Court. The Court ordered the arrest of Kuchenmüller, and his correspondence was seized, and this proved that he had received money, not only to support the defrauders in his bee journal, but also for his assisting them in an illicit manner, as Kuchenmüller had substituted pure honey in the samples before analysis. The magistrate was able to say that the editor of the *Constance Bee Journal* had used all his influence to make the commerce of honey in Germany a monopoly in the hands of adulterators. Kuchenmüller was arrested in Hamburg just as he was leaving the train. All the German bee papers have fully reported the case, which has been one of vital interest to bee-keepers.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

LECTURES IN THE BEE TENT.

[8856] I noticed in the "B.B.J." for October 16th (page 415) a correspondent gives his views on "Utility and Veracity in Bee Tent Demonstrations." I can fully endorse the statements respecting the demonstration referred to in his letter, as I happened to be in the tent at the same time. The lecturer said: "The W.B.C. hive which we have before us is one of the best to use," but the hive shown was actually a single-walled hive known as Lee's "Holborn." As I am an old bee-keeper and agent for bee appliances, I may say I know a W.B.C. hive when I see one.

After the lecture I intended to ask the lecturer if he had not made a mistake in so describing the hive, but to my surprise he walked out of the tent without inviting questions, omitting the most important duty of a lecturer, as in this way bee-keepers can get the information they require.

I asked him why he did not invite questions, and his reply was that: "He did not invite questions as it only led to an hour's controversy."

I told him I had been to a good many lectures on bee-keeping in different parts of Hertfordshire given by Mr. W. Herrod, but had never once known him leave without inviting questions on any branch of bee-keeping, which in no case caused controversy, but elicited thanks from those seeking knowledge in this way.—A Hertfordshire Bee-keeper.

OBTAINING INSTRUCTION IN BEE-KEEPING.

[8857] When first I took up bee-keeping, it was more with an idea of making money than for any other reason. However, before very long it dawned upon me that unless my limited knowledge could be increased my expected profits were a good deal more than doubtful, and I at once set to work to obtain instruction. A brief account of the difficulties I encountered may perhaps prove interesting, more especially as they were the direct means of forming our local Association.

At first sight it appears to be a very simple matter to obtain such information as I required. No doubt it is so *if* you know where to go. Now, I had never heard of a Bee-keepers' Association, or that there was a paper devoted to bee-keeping. The man I bought the bees of believed in the American method, "I was a stranger, and he took me in." He sold me a stock on wicked combs, and queenless at that, so he did not help me. Finding myself all at sea, I applied to the local sub-committee of technical education for a class on bee-keeping. This was promised, providing at least twelve pupils could be guaranteed. After a great deal of trouble twenty promised to join, and all seemed well. However, the County Council stepped in, refusing their sanction to a class, but offered two lectures by Mr. W. Herrod (who, by the way, at that time I had never heard of), providing we found a hall. As no idea of the subject to be taken could be obtained, we declined this offer, and thus, after six weeks of hard work, nothing had been done, and I must say we felt discouraged. I say we, for by this time several of us who had become acquainted desired to increase our knowledge.

It occurred to us that perhaps by meeting together and talking matters over we might increase our information, or, at least, sympathise with one another. This idea I mentioned to a friend who knew of the B.B.K.A., and he suggested that we should write to the Secretary. This was done, and all our troubles vanished.

Mr. Herrod not only gave the information asked for, but proved so sympathetic

and interested that we took heart of grace, and ventured to form an Association, which has steadily grown, and may justly claim to have done much to improve the status of bee-keeping in the district. A great deal of this success is owing to the kindness shown by Mr. Herrod, whom we found always ready to help and advise in every difficulty. Especially helpful to the society is the fact that as he is lecturer to the County Council (Herts), we are enabled to obtain his services as lecturer and demonstrator, with the result that many who used to possess bees have become enthusiastic *bee-keepers*.

Personally, from merely looking on bee-keeping as a money-making pursuit, under Mr Herrod's influence I have made a closer study of the marvellous insect, and the wonders revealed have so engrossed me that had my bees to be kept merely as pets I should consider them a gilt-edged investment.

Now I am certain that there are many who find themselves in the same fix as myself, and do not know to whom to apply for information, and either give up in despair or learn under incompetent teachers, and it appears to me that a judicious system of advertising in local papers might be the means of giving the very information required, and at the same time bring new members to the society.—G. James Flashman, Barnet.

BLURTS FROM A SCRATCHY PEN.

A SIMPLE SYSTEM OF KEEPING BEE ACCOUNTS.

[8858] Not infrequently when airing any little eloquence I may be possessed of, in the endeavour to prove that there is money in the bee business, it has been remarked to me: "Yes! You tell a very good tale, and what you say seems to be all right, but I do not know how to keep accounts, so that I may see if I gain or lose. Can you show me?" Now, to answer this question I submit a very simple method, so simple that I think he who runs may read. It is meant for those who know very little of book-keeping, and will not, of course, satisfy those who have a knowledge of the science of figures. Something more analytic and detailed would suit them better. This would not be difficult to provide at a future date.

Ruled columns, such as are here used, may be bought of any leading stationer, in account book form, and should not cost more than two shillings, probably less. The idea being to discover the "profit or loss" of the year, we start with the amount or value of stock we have on April 1st, say, of this year, that being the date, it is assumed, when bee-keepers are best able accurately to take "spring count." For the sake of an amount, we call it here £10, but let me say, *en passant*, that all figures given in this article have no foundation in reality—are used only for illustrative purposes. This £10, therefore, you enter on the left page, the Receipts side, noting under the "description" column that it is stock. You enter it first

Dr. RECEIPTS.

1913.		Description.		Total.			Stock.			Bees.			Honey.			Wax.			Sundries.		
April	1	*To* Stock		10	0	0	10	0	0												
April	10	„ Sale of Colony		1	10	0				1	10	0									
May	10	„ Sale of Swarm			15	0					15	0									
June	1	„ Sale of Swarm.....			15	0					15	0									
Aug.	1	„ Sale of Honey		4	10	0							4	10	0						
Aug.	15	„ Sale of Honey & Wax		5	15	6							5	10	6		5	0			
Sept.	1	„ Sale of Sundries			9	6														9	6
			£	23	15	0	10	0	0	3	0	0	10	0	6	0	5	0		9	6

in the total column (of course on the same line as date, April 1st) and, secondly, under the heading "stock." The reason for this second entry will appear in the final. April 10th you sell a colony for thirty shillings. These are described and entered under total and also under "bees." You sell swarms May 10th and June 1st. These also are "described," "totalled," and duly entered under "bees." On August 1st you sell honey value £4 10s., the transaction being treated as before, except that this time it is under the "honey" heading. Probably the honey will be sold in smaller quantities, but larger amounts are here mentioned to save space; smaller amounts may be grouped together if desired, to economise trouble. On August 15th you sell honey, £5 10s. 6d., and wax, the latter value 5s. The total column of this line is, of course, £5 15s. 6d., the value of honey and wax together, and on September 1st you sell sundries (possibly

frames, foundation, or appliances) to oblige a neighbour, value 9s. 6d., duly recorded under "sundries." Now, if you will add up your "total" column you will arrive at £23 15s. 0d., and if you cross addition the total of each column, viz., stock, bees, honey, wax, and sundries, you will find you also have £23 15s. 0d., showing that your dissection or analysis of the different headings from which you have received money is correct.

Now for the payments side. On April 5th you purchase from J. Smith hives and appliances, value £1 15s. 0d. Opposite the date, on payment side, this is recorded, being "described" as (invoiced) "By J. Smith," "totalled" and dissected under hives and appliances. On April 21st you purchase bees from "J. Brown." This transaction is similarly recorded, but under the column "bees." The next four entries with the explanation previously given can be easily understood. Sundries paid would include cost of subscription to bee papers, advertisements, and the thousand and one sundry disbursements incidental to an apiary. We come now to March 31st, 1914, which I hope to be allowed to anticipate. You will then take stock, and it is presumed to be this time £12 10s. which is recorded under "stock" column. Your "receipts" during the year, including stock on the receipt side, were £23 15s. 0d., and your payments (again considering "stock" as a contra) were £17 4s. 6d., showing a difference of £6 10s. 6d., which is the balance between your receipts and expenditure, and is your profit for the year's work. This £6 10s. 6d. appears under the column "sundries."

PAYMENTS. *Cr.*

1913.		Description.	Voucher	Total.			Bees.			Hives and Appliances.			Sugar.			Stock.			Sundries.		
Apri	5	*By* J. Smith	1	1	15	0				1	15	0									
April	21	„ J. Brown	2	1	5	0	1	5	0												
May	25	„ J. Jones	3		15	0		15	0												
Aug.	1	„ B. B. J.	4		3	6							6	6					2	0	
Aug.	1	„ J. Smith.....	5		7	6					7	6									
Sept.	30	„ Petty payments			3	6													3	6	
1914. March	31	„ Stock		12	10	0										12	10	0			
		„ Balance		6	10	6													6	10	6
			£	23	15	0	2	0	0	2	2	6		6	6	12	10	0	6	16	0

In taking stock, goods recently purchased may be taken at invoice cost price, but appliances which have been in use for any considerable time must be calculated with a very liberal discount. It is living in a "fool's paradise" to over estimate your belongings. It is very much better to considerably under-estimate than the contrary. Again, if any of your stock includes honey or wax this should be estimated at the lowest price of the market at the moment (of course, considering quality) not at what you *think* you can sell it for. Again I repeat, don't overestimate.

I have not included rent or labour. The former, if paid for your apiary, should be included, but both these are so often thrown in by the smaller bee-keepers that I have omitted them.

My endeavour, as I stated at the commencement, has been to provide a simple means of knowing how much has been gained and lost during a season, and for that purpose everything has been cut out which might complicate. It is possibly open to much criticism, but perhaps this should be welcomed for the good purpose in view.—J. Smallwood.

BEES IN NORTHUMBERLAND.

[8859] I think it might not be out of place if I were to give my report upon the last honey harvest in this district, though I am rather diffident in doing so after reading such glowing reports from South Country places. I have had bees now without a break for thirty years, and in the whole of that time I consider that a stock has done well if I get one rack of twenty-one sections of flower honey and perhaps a swarm or two, following this up by getting two twenty-one racks of sections of heather honey. I should say this amount is a record, and very often it is much less. This year the clover harvest was late in coming, hence the hives were very light, and this was the cause of everything being rather backward. To be as correct as possible, each stock gave about twenty-one sections of clover or flower honey, and the best hives with vigorous queens about forty-two sections of beautiful heather honey—others perhaps twenty-one to thirty-two sections—some nothing. I may say that other

people's hives gave a somewhat similar result. If I were asked the question, "Was the past season as good as that two years ago (1911)?" I should say not quite, although this season's honey is of fine quality.

I met our Hon. Secretary, Captain Sitwell, at Wooler, and he informed me that many bee-keepers have answered to his call to join the Northumberland Bee-keepers' Association. If ever there was one who is doing good work in promoting bee-keeping on proper lines, it is Captain Sitwell. I am told that the Wooler people won most of the prizes for honey at the great flower show held at Newcastle-on-Tyne. The worthy Captain has arranged to give lectures at various places in the county upon bee-keeping. There should be someone appointed in each place chosen for a lecture, to assist the lecturer, both in providing a room for the lecture and in making it known in the district, so that a good audience will be present.

It is many years since I wrote an article to your paper; my last letter described a bicycle ride among the bee-keepers from Ashington to Wooler.—JOHN WILKINSON, Ashington, Northumberland.

"ISLE OF WIGHT" DISEASE.

[8859] I was very glad to read Mr. H. Wilcox's able letter expressing his conviction, which I myself fully share, that "Isle of Wight" disease is greatly favoured by continually feeding bees on sugar, which, by overtaxing their delicate digestive apparatus and thus lowering their vitality, renders them an easy prey to any disease that may be going. Owing to the high price of sugar in Italy (8d. a pound), this sugar-feeding system is never practised in this country, and the "Isle of Wight" disease, foul brood, and other diseases are rarely met with. Italian bees are fed exclusively on honey, and are therefore blessed with good health and strong constitutions, and when imported are found to be generally immune.

Anything that lowers the vitality of bees, such as excessive tampering and fidgetting, improper feeding, and other dangers, *must*, sooner or later, produce fatal results. As your correspondent rightly remarks, the proper food of bees is *not* sugar, but honey, and I would add another truth too often forgotten, that bees are extremely delicate creatures.—M. D. FLEISCHMANN, Spoleto, Italy.

[8861] There seems to be a great difference of opinion as regards the causes of the "Isle of Wight" disease.

Some people, including myself, think that even if the disease is not actually brought on by excessive dampness, it is certainly helped by it; the pollen becomes mouldy, and consequently detrimental to the bees, who get into a weak state of health and easily succumb to the disease when it makes its appearance.

I suggest that a box, covered over with perforated zinc, and containing calcium chloride, should be placed in the hive. Calcium chloride is well known for its powers of absorbing moisture, but the question is, would it absorb too much moisture and make the "last state worse than the first?"—V. W., Crowborough.

DERBYSHIRE NOTES.

BEES AT THE MOORS.

[8862] It was agreed between Mr. D. Wilson and myself one day when we met on the moors that we should, between us, send a contribution to the BEE JOURNAL, but I see he has got his part in first (page 406), and feel rather flattered at his reference to myself.

Nothing gives me more pleasure after a night's work down the mine than to ramble about among the blooming heather for two or three hours watching the bees at work (although I have a cycle ride of some seven or eight miles to get to it), so I knew practically where all hives stood within a two miles radius of my own, and where the best patches of heather or clover were to be found. I discovered Mr. Wilson's hives in one of my rambles by following the bees; they were crossing a road in such numbers that I felt sure there must be a lot of hives close at hand, so I followed them, and up the side of the moor, over a wall into a small field, where my search ended. A better place for about fifty hives it would be hard to find, the enclosure was about 100 yards wide, facing south, with a six foot wall all round it. The sun was hot, and the bees were fairly dancing as they went to and fro; I lay for about ten minutes on the top of the wall watching them. No human being was in sight, so I left them, and on reaching home, wrote Mr. Wilson, who asked me to look at them at any time I was in the neighbourhood, and take especial note of an Italian stock. I went again two days later, and found how easy it is to look at bees when honey is rolling in, (as it was then) without any veil or smoker. I never saw bees so quiet up there before; they are mostly very soon upset. The (White Star) Italians had only been there two days, but I could see they meant doing something now they had come. Mr. Wilson says in his notes that he put two other hives in the line of flight. The Italian stock was the centre one of three, standing behind one another, facing south. There were a lot of yellow

bees in the other two hives, and I lay for over an hour watching one day, within a foot of the entrance. The Italians would not allow a black bee near the hive; if one alighted on the flight-board five or six would seize it and drag it off. This happened many times while I was there. The noise of their wings fanning at the entrance was like a railway engine blowing steam off; I put this down to the fact that the entrance was too small (only about 6ins.). I have noticed some of mine have not been too wide with a 17in. entrance.

It really has been a season long to be remembered. During the whole of August bees only had one wet afternoon, there were two wet nights, but the rest of the time it kept warm, with not too much sun to hurry things on too fast, but warm dull days, such as the bees love. Two things struck me while on my rambles, one was the quantity of bloom (it really was a sight the third week in August when the heather was at its best), the other was the few bees one saw on it: in some years one could not sit down anywhere without five or six bees round one but I have sat a long time this year on some of the most glorious days and have only seen odd ones. One reason for this is there have been fewer hives sent to the moor, so perhaps that accounts for it, and I know I did not take nearly such good stocks as I did last season. My best stock will have given me about forty sections, and another thirty sections, besides several partly filled ones; then I shall have about 70lbs. to press out from four more stocks, but the brood-nest is about solid. One stock went to the moor with less than 2lbs. of honey in the brood-combs; they have filled eleven brood-combs solid, and put 20lbs. in supers, after I had taken 58lbs. of clover honey from them. I have come across another bee-keeper who had four hives that yielded over 100lbs. of the most delicious heather and clover blend I ever tasted. It appears about two-thirds clover but is so thick that when it was uncapped it would not run out a little bit.

I have been to the Grocers' Exhibition since the above was written, and to anyone interested in bees and honey it was a sight to behold. However, abler pens than mine have described the show, and as I had the honour of helping Mr. Herrod to pack the granulated honey, I will confine my remarks to calling attention to a few mistakes we exhibitors make, which I found out then. Firstly, always send *good* boxes. Mr. Herrod had to remake one that someone had sent twelve jars in. It was made out of a grocer's box and had simply fallen to pieces. How can we expect our honey to go and come back safely in such packages.

Secondly two large tin-tacks driven through the brass eyelets in the label can be prized out with a screwdriver, and the label reversed quickly for returning, but I found some exhibitors had knocked in three or four sprigs, which could not have been got out with pincers.

Thirdly, I cannot see any necessity for cord or rope tied round the packages. The *right* box has a handle on it, and is fastened with a universal fastener, and one screw in the top, with two tacks in the label. Such a box was a pleasure to handle. At this show there were some 200 boxes to pack up and put away, and it behoves us exhibitors to make the work as light as possible.

Someone unscrewed my box and took a jar out in transit when going to the show, and I saw several exhibits with a jar short. If they had all been taken in transit it does not reflect creditably upon the railway companies' men.

On page 398 of "B.B.J.," October 2nd, Mr. Crawshaw refers to a letter of mine. I might explain that the "farmer" in question was a widow, and the men were her sons, who live with her and do the work.—Tom Sleight, Danesmoor.

TREATING "I.O.W." DISEASE.

[8863] Your correspondent, "T. K." (page 425) voices a general experience. Here, last season, wholesale robbing followed treatment with Ayles' cure, even when the stocks were unaffected by disease.

Last spring a strong colony suffered another to rob it day by day, without resistance—"passive robbing" I called it. As the queens were sisters, I thought possibly the hive smell for each stock was the same, so I tried to scent the robbers strongly. I have since been forced to the conclusion that as all the hives had been treated with "Ayles," all the stocks smelt alike, and the amount of "borrowing," and exchange of stores that has been going on this autumn has been phenomenal. I have proved it by "flouring" bees.

Again, in strengthening nuclei, I have moved a frame of brood and bees from any strong stock, and dumped it down in the middle of the nucleus without precautions. No fighting ever followed. The disadvantages outweigh the advantages, however, and I am taking pains to burn out all trace of creosote, whenever a hive is overhauled for cleaning.—H. W., Gravesend.

[8864] A correspondent, "P. E.," states (letter 8788, p. 336) that for "Isle of Wight" disease he medicated some syrup with "the homœopathic sulphate of quinine (*China* 7)." Is not this a slip for *Chininum sulphuricum*?

"China" or *Cinchona officinalis*, is prepared by infusing in alcohol the powdered

bark of the cinchona or quinquina tree of Peru.

"*Chininum sulphuricum* (sulphate of quinine) is one of the alkaloids obtained from the same bark. It is prepared (I quote from Hempel) upon a large scale, (*a*) as *basic quinine*, which, after perfect evaporation, crystallizes in the shape of narrow, elongated, somewhat pliable needles, shining like mother-of-pearl, or in the shape of scales. It is scarcely soluble in cold water, but readily so in boiling water; it is likewise easily soluble in alcohol, but not easily in ether. When heated, it melts soon, and looks like molten wax; when heated very much, it assumes a beautiful red appearance, and finally burns without leaving a residue. It easily crumbles in a warm and dry place. (*b*) As *neutral quinine*, the crystals of which are colourless, transparent, rectangular, quadrilateral prisms. It dissolves in 11 parts of water of 12degs. R. (equals 59deg. Fahr.), it readily dissolves in alcohol, but very little in anhydrous alcohol. It crumbles by exposure to the air, and by so doing loses, according to Baup, 24.66 per cent. of water.

"The sulphate of quinine of the shops is frequently adulterated with the sugar of manna, gypsum, magnesia, alumina, boracic acid, sulphate of ammonium, sugar, sugar of milk, gum stearine, sulphate of cinchonine and salicine. According to Duflos, the purity of the sulphate of quinine is established by the following facts: It burns without residue when heated in a platina spoon over a spirit lamp: a solution of quinine in concentrated sulphuric acid is perfectly colourless; and if we pour liquid caustic potash upon it, not the least odour of ammoniacum is perceived. (Salicine turns red by pouring concentrated sulphuric acid upon it, whereas quinine forms a perfectly colourless solution with that acid.)"

I hope "P. E." will favour us with further reports of his experience.—William Munro, Dundee.

DISEASES OF BEES BILL.

[8865] I notice in a contemporary the amusing position of an Irishman of Clough, Belfast, who is strenuously advocating the doctrine of *no legislation* for England, while at the same time he is protected by a Foul Brood Act. This is truly Irish, to be able to arrange their own affairs and dictate to Englishmen what they shall or shall not have. It reminds one of the Irish Socialist in argument with an English anti. Pat: "Sure, sor, and eviry mon should share and share aloike." Englishman: "Do you really mean that, Pat?" Pat: "Oi due." Englishman: "Well, now, you have two nice pigs in the stye and I have none." Pat: "Ould on, mister, it don't apply to pigs. Sure, didn't Oi buy and pay for them meself, and they're moine?"—An English Irishman.

EFFECT OF BEE-STINGS.

[8866] With reference to the letter signed "Victim," in your issue of the 9th instant, and for the benefit of those who are occasionally stung in a vein, and who are highly susceptible to the poison of the sting, I would mention the case of a brother of mine who was stung on the lip and very shortly developed most alarming symptoms, turning black in the face and being unable to breathe. Fortunately a doctor was in the house, who administered a dose of sal volatile, which gave immediate relief, but the symptoms shortly returned, when the dose was repeated. I do not now remember how often the sal volatile had to be given, as it occurred in the year 1877, but gradually all trouble passed away. The doctor at the time said that he must have been stung in a vein, and but for the treatment afforded might have succumbed. Since then I have always kept a bottle of sal volatile handy, but am glad to say have never had to use it.—C. E. F., Kent.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

One Word for the Skep (p. 387).—At first sight it seems unlikely that Mr. Desmond is right in supposing that skep-dwelling bees may have been educated to economy of stores. But the more one sees of animals the more one realises their adaptability to conditions, and their use of reasoning power, which we are too apt to arrogate to ourselves alone. Much nonsense is written by clever people about reflex machinery, the remedy for which would be to send the writers from their armchairs to the woods and pastures—which might prove both fresh and new to them. But to return, it might equally well be said that acquaintance with the frame-hive had taught the bee necessity for increased provision. However this may be, one can be tolerably sure that bees winter better, or with reduced consumption, in a skep than in the average frame-hive. But if the skep has not improved the bee it is, I think, a fallacy to suppose that the skeppist's management caused deterioration of stock. It may be true that he took, as a rule, the heaviest as well as the lightest stocks, but let us consider this fairly. The heaviest were usually first swarms, and the strain which produced these was perpetuated in the parent stock or by a strong cast. The lightest would include late casts; stocks which had overswarmed; and diseased or

otherwise deficient lots. If, in addition to this, old skeps were renewed from time to time, then these old-time methods were sane enough, and did not, I think, tend either to deterioration or disease.

The Duties of an Expert (p. 392).—Col. Walker's notes are so full and so practical that they hardly leave foothold for the criticism he invites. However, like the lady who tried to take the ace with the king, we can do our best. The expert might well carry a suitable hive-tool, and a "frame-tongs," which, if all-metal, might be kept like surgical instruments in a solution of Lysol. The preliminary advice card might contain a request that the owner should jot down beforehand any questions to ask the expert. The back of the card might be ruled and numbered for brief notes or instructions as to the hives, the card to be handed to the expert. This would be a great help in the absence of the owner, which absence does unavoidably occur at times. Col. Walker does not hesitate to burden the traveller with a good deal of gear in addition to his personal requirements, and it almost seems as though the modern expert must use a motor-cycle and side-car, in which case he could carry that inestimable boon, a portable operating tent.

Successful Skeppists (p. 395). It is acquaintance with just such "bee-keepers of the old school," to use Mr. Bull's expressive phrase, which has helped to make me reconsider accepted opinion about the skep, and to say a good word for it in the hope that facts rather than opinions might be brought forward by others. I have in mind at the moment an apiary of some thirty skeps, whose owner has a sale for swarms, and whose bees make a substantial addition to his income with a minimum of expenditure. Frame-hive enthusiasts appear to overlook the fact that supers are worked on skeps. I have often seen splendid sections thus produced, whilst "caps" and bell-glasses still obtain prizes, and find a ready sale. If the capital outlay upon skep or frame-hive be considered, then a ten-shilling return from the skep compares favourably with £1 from a frame-hive. Outlay upon a new skep from time to time is balanced by depreciation or upkeep of the wooden hive. I do not, however, wish to institute such comparison between the respective types, and merely do so in outline for the consideration of those who contend that the skep is unprofitable.

A Home-made Slow-feeder (p. 396).—This feeder, or rather feeding-stage, is so simple, and at the same time fulfils so many purposes, that it is difficult to find much fault with it. The main objection is, to my mind, the involved labour of tying up the bottles, and the necessity for renewing the covering material. The Cheshire method of inverting the bottle in conjunction with a shovel would seem to be an improvement. I have made many feeders from shallow biscuit tins, but they have the demerit of obliging the bees to make a journey for the food. It is an advantage to have the food close to the cluster. A grooved board upon which the open bottles were inverted might be a a good thing. The grooves might communicate with a groove around the holes, or at the edge of the board, to which groove alone the bees might have access. Or access might be given to the whole of the grooves. A large number of bottles could be given at once, and the food would be thoroughly warmed by the cluster. But nothing could be much simpler than Mr. Long's feeding stage.

Bee Shows to Come.

November 20th, at Bromsgrove, Worcestershire.—Annual Show of Honey, Wax, Honey Cakes, Candy, &c., will be held in the Drill Hall in connection with the Bromsgrove and District Gardeners' Association and Horticultural Society. Seventeen classes (twelve open to all). Classes for wax, honey cake, bee candy, honey sweetmeats, and honeyed fruit jelly, one for single 1lb. jar of honey. Prizes 21/-, 10/- (entry free). Entry fees in all other classes, 6d. each. Each exhibitor will receive a free admission ticket to the Show. Schedules from Arthur Aston, Cemetery Lodge Bromsgrove. **Entries close November 6th.**

BRIEF REPORTS.

I have now been taking in your "B.B.J." for some time, and I am sure it is by its aid that I have been so successful with my bees. I am only what you might term a novice, so I cannot say if my brief report is worth printing in your paper, but you may please yourselves. The district where I keep my bees is West Staffordshire, and by what I have gathered from my brother bee-keepers, it has been a very good season for honey, which has been of the best quality. I have been successful in taking 135lbs. of honey from one stock, 100lbs. extracted, and 35lbs. in sections, this being all capped over. I did not think such a quantity could be taken from one stock. I am glad to say we have very little disease in this district.—H. B., Staffordshire.

From three swarms obtained towards the end of June, I have taken 164lbs. of very nice light honey, procured from clover and veronica, I should think. The bees have been very busy lately working on the ivy blossom, as the weather has been fine and mild. Many of the bees of one stock have a peculiarity of frequently alighting on their backs.—W. G. Fisher Webb, Falmouth.

I should like to thank you for so kindly printing a long letter of mine, asking

advice, and also for the very excellent advise given. I have profited by it, as I have increased my six stocks to nine, and secured 240 sections of beautifully finished honey, as well as a good many more unfinished ones. My best hive gave me 62lbs. The swarms were all very late, as the fine weather did not begin here till the middle of July; but a swarm, hived on July 26th, filled nine frames with brood and stores, and gave me twenty-two beautiful sections of heather honey before the end of the season.—A. M. F., Tobermory, Argyllshire.

Notices to Correspondents.

J. G. S. (Ewell).—*Removing Propolis from Badly-soiled Supers.*—(1) Make a solution of Fels-Naptha soap and clean the woodwork with this. (2) The peculiar smell you describe is no doubt caused by the bees gathering nectar from ivy, which has been worked on more than usual on account of the warm late season.

H. F. (Totnes).—*Bees Consuming Candy.*—Bees will often eat well-made candy in preference to their own stores. Wait until about the end of November, and then put on another cake.

F. A. K. (Shanklin).—*Drones in October.*—It is not unusual for bees to breed late, but we think you must be mistaken about the drones. If they are present at this time of the year it is an indication of either queenlessness or a virgin queen too old for mating.

J. H. B. (Plymouth).—*Water Fountain for Bees.—Medicated Candy.*—(1) A simple water fountain can be made by filling a glass jar with water, then placing a saucer on the top and inverting it. As the water is sipped up by the bees more runs out from the bottle until all is used up. (2) Sulphate of quinine would act as a tonic to bees not suffering from "Isle of Wight" disease if put into the candy.

Boar's Head.—*Bee Association.*—There is no county Bee-keepers' Association for Dorset.

A. F. W. N. B.—*Drones in October.*—Your experience is similar to that of our correspondent (see above), and the same remarks apply in your case. Are you sure they were drones?

Honey Samples.

D. W. (Derby).—The granulated sample is a nice heather-blend, and should fetch 1s. to 1s. 2d. per lb. and 6d. to 7d. per ½lb retail. The other sample is fermenting; it contains heather-honey, but in its present condition is unsaleable.

H. F. (Sheffield).—The sample is not adulterated, but it is a very inferior foreign honey and not worth 3d. a lb., to say nothing of 6d.

J. B. (Manchester).—A very poor sample, thin, partly granulated, and of poor flavour.

P. R. (Sheffield).—A rather thin honey of nice flavour. Must be shown in the light class, as it is too light for the medium.

B. C. (Ouseburn).—A very nice granulated honey of good flavour, and smooth in grain. Quite good enough for show bench.

C. E. S. (Bodmin).—No. 1 is a beautiful light clover honey, and the best sample of the three in flavour and aroma. All the samples are good in density and colour. Nos. 2 and 3 could be entered in medium class; they are just within the right shade: very little would have made them too light. No charge is made for our opinion.

Suspected Disease.

W. J. B. (Corsham) and G. W. P. (Wilts).—Bees have died from "Isle of Wight" disease.

Interested (Lutterworth).—The bees are affected with "Isle of Wight" disease. No charge is made for answering queries.

A. J. S. (Leamington).—There is no disease in comb sent, but it would be unwise to use combs with chilled brood in them. Melt them down, and start with new frames and foundation.

Bocking; W. E. B. (Cardiff); J. T. (Kington); E. M. S. (Northallerton); Dorset; C. C. (Stourbridge); S. A. S. (Uxbridge).—The bees have died from "Isle of Wight" disease.

B. M. (South Norwood).—The bees were much too dry for us to say what caused their death. From your description, we should say the stock was affected with foul brood.

Anxious (Manchester) and G. A. M. (Cardiff).—We are of the opinion that the bees have "Isle of Wight" disease. There is no cure, the only safe course is to destroy them.

T. C. (Mobberley).—The comb is badly affected with foul brood.

Special Prepaid Advertisements

Two Words One Penny, minimum Sixpence.

Orders for three or more consecutive insertions entitle advertisers to one insertion in "The Bee-keepers' Record" free of charge.

Trade *advertisements of Bees, Honey, Queens, and Bee goods are not admissible at above rate, but will be inserted at* 1d. *per word as* **"Business"** *Announcements, immediately under the Private Advertisements. Advertisements of Hive-manufacturers can only be inserted at a minimum charge of* 3s. *per* ½*in., or* 5s. *per inch.*

PRIVATE ADVERTISEMENTS.

OLD VIOLIN, with bow and case, 17s. 6d.; would exchange for honey, or anything useful; what offers for old "Bee Journals"?—J. FROST, Hartshill, Stoke-on-Trent. v 8

Editorial, Notices, &c.

AYRSHIRE AGRICULTURAL SHOW.

THE HONEY AWARDS.

The bee-keeping industry was well represented on October 23rd and 24th, at Kilmarnock, at the Ayrshire Agriculture Association's Dairy Show. The judge, Rev. Mr. M'Lelland, spoke as to the honey section, which he thought was the best he had ever seen there. There was not a single bad bottle of honey or a single section that was not worthy of taking a place in the prize list. The run honey was of splendid consistency and flavour, and the heather honey was also very good. The awards were as follows:—

Six 1-lb. Jars of Extracted Honey (24 entries).—1st, John M'Donald, Lochfoot, Dumfries; 2nd, Thomas Pate, Hopefield, Milauthort; 3rd, John M. Stewart, Mollance Gardens, Castle-Douglas; v.h.c., H. C. Gibson, Ballygowan, Belfast; James Halliday, Slogarie, Mossdale; h.c., H. M'Quiston, Dankeith Dairy, Kilmarnock; c., George C. Allan, Ashgrove Street, Ayr.

Six 1-lb. Jars of Extracted Heather or Mixed Honey (10 entries).—1st, A. White, Lyndhurst, Cumnock; 2nd, Peter M'Donald, Car Road, Cumnock; 3rd, George Scott, Ayr Road, Cumnock; v.h.c., John Henderson, Car Road, Cumnock; h.c., James H. W. Fishwick, Chatburn, Lancs.; c., Thomas Pate.

Six 1-lb. Sections of Honey other than Heather (12 entries).—1st, John M'Donald; 2nd, A. White; 3rd, Joseph G. Nicholson, Cumberland; v.h.c., John M. Stewart; h.c., George C. Allan; c., Allan Gibson, Parkend Cottage, Tarbolton.

Six 1-lb. Sections of Heather Honey (9 entries).—1st, Joseph G. Nicholson; 2nd, Alex. F. Borland, The Knowe, Cumnock; 3rd, James Halliday; v.h.c., A. White; h.c., Peter M'Donald; c., John Henderson.

Six 1-lb. Jars of Granulated Honey (10 entries).—1st, John Alexander, Burnbank, Mauchline; 2nd, Robert Steven, Irvine Road, Kilmaurs; 3rd, F. W. Frusher, Peterborough; v.h.c., George C. Allan; h.c., John Dodd, Provostland, Tarbolton; c., J. Woods, Mansfield, Notts.

Beeswax (13 entries).—1st, Alfred Hiscock, Kettering; 2nd, Sidney Sanderson, Cambs.; 3rd, John M. Stewart; v.h.c., Thomas Pate; h.c., Allan Gibson; c., John Rowlands, Wales.

Three 1-lb. Jars of Extracted Honey (members) (16 entries).—1st, Alex. F. Borland; 2nd, Peter M'Donald; 3rd, David Briggs, Maybole; v.h.c., A. White; h.c., John Henderson; c., Miss Agnes Skeoch, Stewarton.

Three 1-lb. Sections (members) (8 entries).—1st, John Dodd; 2nd, A. White; 3rd, Peter M'Donald; v.h.c., H. M'Quiston; h.c., Geo. Scott; c., Allan Gibson.

Two 1-lb. Jars of Extracted Honey (gift class) (17 entries).—1st, A. White; 2nd, John M'Donald; 3rd, John M. Stewart; v.h.c., Peter M'Donald; h.c., Alex. F. Borland; c., John Henderson.

Two 1-lb. Sections (gift class) (10 entries).—1st, John M'Donald; 2nd, John M. Stewart; 3rd, Joseph G. Nicholson; v.h.c., Robert Robson, Wooler; h.c., Allan Gibson; c., A. White.

BRITISH BEE-KEEPERS' ASSOCIATION.

THE CONVERSAZIONE.

About one hundred and twenty members and friends attended the conversazione, held at the Lecture Hall, Zoological Gardens, on October 23. These half-yearly gatherings are increasing in popularity, and many well-known members of the bee-keeping fraternity were noticed chatting together and greeting old friends during the tea-hour. A number of interesting objects concerning the craft had been brought by members, and these were displayed upon a side-table. Miss M. Johnston's beautiful paintings of South African bee-flowers were much admired. Mr. J. C. Roberts (Maidstone) brought his glazing outfit and section-folding appliance, and Rev. F. S. Jannings a number of ingenious and useful articles for the bee-keeper, many of them having been designed by himself. They comprised dissecting microscope and slides of mouth of the bee and poison sac, sting structure, *Braula cœca*, &c.; wire network frame and wire gauze slide, for sending hives by rail or to the moors in perfect safety; wire gauze slides, and glass for circumventing robbers; smoker with handle and hook; stove and lamp for heating Wioblet spur embedder; wire reel holder; boiler and lamp for heating uncapping knife; hive scraper; home-made automatic foundation fixer; soup-tin lined with felt for covering feeding bottle and keeping syrup from being chilled; winter bridge; home-made bottle-feeder; candy-box, made out of glass, brown paper, and wood from egg-box; wheel cutter for cutting corners off foundation; hive tool, "The Handy Man"; pint measure for mixing disinfectants (made out of empty Symington's pea-flour tin); queen travelling cage from Carniola; queen cage fixed on to a cork bung, handy for passing round queen at bee-tent exhibitions; glass for sampling mead and honey vinegar; various queen cages; sample bottles of mead and honey vinegar; fine fruit in bottle from West Indies; sugar-cane stick from West Indies; samples beet

and pure cane-sugars; case showing worker and drone comb; candy-box in which bees partly consumed the candy and then built drone comb right across box; box of Japanese tooth-picks for examining suspicious cells; samples of prize honey and various Association labels; compass for setting hives S.E.; spirit-level for setting hives correctly and for allowing ¼in. fall at front to drain off rain; small bottle of honey-dew; dummy frame for practising turning a frame bottom bar upwards and reversing it, &c.

Mr. W. F. Reid (Vice-Chairman B.B.K.A.) took the chair at 6.30, and briefly introduced Mr. A. G. Pugh, who proceeded to read his paper on "Judging Honey" as follows:—

Mr. Chairman, Ladies and Gentlemen,—The subject of "Judging Honey," selected by the Council for our consideration this evening, is, I think we all agree, a most important one. It has, however, the disadvantage, from my point of view as speaker, of having recently been so fully dealt with by Mr. Wm. Herrod in his book, entitled "Producing, Preparing, Exhibiting, and Judging Bee Produce," with which most of my hearers will be acquainted. There is, therefore, little possibility of many new ideas being propounded by me, especially when it is borne in mind that Mr. Herrod and I have worked together for so many years. Our views and opinions naturally run largely in the same direction.

It is rather a strange coincidence that so many communications have appeared in the "B.B.J." bearing upon this subject since it was selected as a topic for discussion at this meeting, so there is evidently a desire abroad that the question of judges and judging, as applied to our craft, should be kept well to the front.

In dealing with this subject, it seems to fall naturally under three heads: First, the judge; second, the article to be judged; third, the method of judging, etc.

Firstly, then, we have to consider the judge. What special qualities is it desirable that he should possess? Primarily, it is necessary that he should have experience. We are all familiar with the complaint that at small horticultural and similar shows judges of flowers, butter, etc., are frequently asked to undertake the duty of judging the honey exhibits, and whilst being, no doubt, excellent fellows in their respective spheres, they sometimes have no idea as to what is required to obtain the highest points in the honey classes.

At small local shows this is a real difficulty, and can be best met by the local Bee-Keepers' Association (which is, presumably, granting a portion of the prize-money) making it a *sine quâ non* that prizes will only be awarded upon the recommendation of a judge approved by the association.

Having agreed, then, that an experienced judge is necessary, it is desirable to consider how such experience can be acquired. Personally, I think this is the weak point in present-day conditions. Sufficient opportunities are not always available for training the requisite number of judges. It seems to be generally conceded that a first or second class expert *must* be a competent person: but whilst this is often quite true, it is not always the case. The fact must be borne in mind that the examination for expert certificates makes little, if any, test of a person's competency in this direction.

At a recent county exhibition a honey judging class was inaugurated, prizes being offered to the competitors who placed six different samples of honey in their respective order of merit, and named the probable source from which each had been gathered. This competition proved very popular, and it was noticeable that some who were anxious to gain a little knowledge—not being sufficiently experienced to hope to get a prize—willingly paid their entrance fees to obtain the opportunity of becoming acquainted with the respective flavour, etc., of honey in competition.

The more noticeable feature, however, was the diversity of opinion expressed as to the merits of the honey, and as to the sources from which it had emanated. The results of this competition proved to my mind that a competition on these lines, say with eight or ten well-defined samples of honey, the reputed source of which had previously been proved by microscopical examination, to be held at a Royal or other important show, would be most helpful; and it is even desirable that a judging certificate should be granted to successful competitors in an examination on these lines. The Grocers' Exhibition gives us a good lead in this direction by awarding valuable prizes in the competitions for tea and coffee blending and sampling.

It is sometimes rather annoying to those who exhibit exceptionally fine extracted honey to find that the number of critics and would-be judges have taken a somewhat heavy toll of the honey by taking *free* samples, and secretaries and stewards are blamed for allowing this to take place: but as a great sinner in this respect I feel very lenient to those who in turn have their revenge out of my exhibits, and personally I do not think a competitor who has won a prize should be too hard upon such a practice, at any rate until the suggested honey-judging contests

become *un fait accompli*, because at the present time practically the only way in which anyone can ascertain what kind of honey Judge So-and-so considers worthy of a first prize is by means of this surreptitious sampling.

A good way to get some practice in the art of judging is to be appointed assistant judge, and many of our present-day judges look back with pleasure to the time they were understudies of some of our departed veterans such as Messrs. Broughton Carr, Weston, Hooker, and others.

Where a show has a reasonable number of honey classes it is *always* advisable to appoint two judges, for, whilst the junior is gaining experience, the senior is often glad of a colleague's opinion when exhibits are nearly equal on all points, and the system of dual judges commends itself to all concerned.

Of course, it is most desirable that a person should be in a good state of health, with all his faculties well developed, at the time he undertakes the duty of judging honey, and in addition to the five accredited senses, a *sixth*, the due sense of proportion, is a most valuable one, as different localities and seasons have their own peculiar effect upon the honey, and acute discrimination is often required.

Fads, fancies, and idiosyncracies are all to be avoided, and a just and impartial decision, without fear or favour, should be unhesitatingly given, when it has been carefully, patiently, and conscientiously arrived at. Finally, I am of opinion that the best all-round judge will usually be found in a really good prize-winning exhibitor.

Having dealt with the personality, training, and experience of the judge as fully as my limited time permits this evening, I will now proceed to the consideration of the second point: "The article to be judged."

Now, although at a fairly large show the judge will have to adjudicate such other classes as bee-keepers' appliances, bees in observatory hives, beeswax, honey vinegar, honey cake, mead, etc., etc., our title and my instructions confine us solely to *honey*, so we will leave these interesting items to a more convenient time.

It has already been suggested that nothing but actual practice and experience will enable a person to fully appreciate and gauge the subtle, unique, and delicate flavour and aroma that is so characteristic of good British honey. Such characteristics must, however, be present in all honey that has a chance of winning a prize at a large show, and it will be well to deal with these and other points when considering honey in the various forms in which it will be submitted to the judge's inspection, *i.e.*, in the following five forms, in which it usually appears on the schedule: (1) Run or extracted honey; (2) Granulated honey; (3) Section honey; (4) Honey in frames; (5) Honey trophies.

Our first form, then, is run or extracted honey in its liquid form, and here we usually have the keenest competition. The fact that honey is a food product naturally places flavour as the most important point in its consideration, for no matter how good or attractive it may be in other respects, failure in this, possibly prohibiting its use as food, makes it valueless. For instance, in a large single bottle class, recently judged by myself, the exhibit that would otherwise have easily been first had to be relegated to obscurity owing to the fact that it had been so strongly impregnated with carbolic acid (no doubt caused by some carelessness of the exhibitor) that the flavour was obliterated and it was rendered useless for food.

Fortunately for judges and competitors alike, the result of years of experience brought out the standard colour scheme, with which, I daresay, most of those present are familiar. It is, however, to be regretted that some exhibitors are still so careless that one frequently finds honey that would secure a prize in its proper class shown in a wrong one, and consequently disqualified. The purchase and use of a set of colour glasses from the "B.B.J." Office, at a cost of a few pence, would be a good investment for such competitors, and prevent much unnecessary annoyance and expense.

I have sometimes thought that a still further sub-division of the huge light honey classes at the Royal, Grocers', and Dairy Shows would be an advantage, as there are usually numerous exhibits at these shows of that special product usually termed "water white" honey. This colour, or rather want of colour, has sometimes caused a little dissension amongst both exhibitors and judges, and is somewhat difficult to deal with, and it should be given a class to itself.

In those districts where heather honey is in evidence, upon no consideration should such honey be allowed to compete in the dark honey classes. It is far better to divide the prize-money, so that each variety has its own class and stands upon its own merits. Again, heather honey and heather blends should not compete against each other, each having its own characteristics.

The class for heather blend honey is one upon which a variety of opinions are held, those who prefer the heather flavour naturally liking a blend in which the strong flavour predominates, whereas others have an inclination towards a good

clover honey, with just that "dash" of heather which to some palates produces the flavour which surpasses *all* others.

Following close upon flavour and colour comes the question of density, or consistency. This is a most important point, because thin honey is generally in an unripe condition, and will frequently set up fermentation in a short time. It has bad keeping qualities, and may soon become useless. I have often wondered whether it would not be possible to obtain some kind of instrument which would register the actual specific gravity upon being immersed in the honey. If such an instrument could be obtained at a reasonable price, and was easy to use, it would be of great assistance when so many samples are so nearly alike. Care must always be taken in making a just allowance for the necessarily high temperature often experienced in the show tent during the heat of summer, as this has a great effect upon the exhibits.

Aroma, although not so important as the other points already mentioned, adds a great charm to a first-class honey. It is, however, very elusive, and often disappears to a great extent if the caps of the bottles are removed for any length of time.

In judging the general appearance, or "get up," as it is usually termed, of an exhibit in this class, it is always considered a great defect, and would almost invariably debar prize-winning, for the bottles in an exhibit to vary in size or filling. It must, however, not be overlooked that the colour of the glass is sometimes of a distinctly objectionable green colour. Of course, it is easy to say the exhibitor should not buy or show such bottles, but sometimes he has little choice, and as it is the honey, and not the bottles, that is under consideration, perhaps it is as well for the judge to exercise leniency in such cases.

As we are taught "Cleanliness is next to godliness," an exhibit showing any impurity in, or on, the bottle, wad, or cap must be passed over, and unless the honey is perfectly bright and clear, it should never be found amongst the prize-winners. Even the slightest sign of granulation is most objectionable in the liquid honey classes.

Any extracted honey having froth or scum upon its surface, or containing particles of wax, etc., shows careless or hurried preparation, and, no matter how good in other respects, will be passed over by a good judge. The particles may, however, sometimes be so small that good eyesight and good light are necessary to discover them.

Granulated Honey.—In regard to granulated honey, it is worthy of mention that good, even granulation being always considered a proof of the purity of honey, this is a class that should commend itself to our Show Committees, as the mind of the public is not always clear upon the point. In judging this class, the points enumerated in respect to liquid honey will apply. The grain of granulation is an important point. A rough, coarse grain is not to be commended, whilst the very smooth or "greasy" grain is equally objectionable. The whole exhibit should, naturally, be uniform in colour, whilst this should not be too chalky. The air spaces often seen in this class, although most difficult to avoid, detract from its appearance and must be taken into account, and care must be taken to see that no signs of fermentation are present on the surface of the honey.

Honey in Sections.—Our third form of honey exhibits is that known as "sections," and here both the exhibitor's and judge's abilities will be put to the test, it being generally admitted that the production of "A1" sections brings out the bee-keeper's abilities to their greatest extent, whilst the judge must take care, by careful inspection and keen observation, that those abilities have not taken the wrong direction in faking or trying to improve upon nature in an illegitimate manner by covering over any defect in sealing, etc., or in feeding syrup to the bees to enable them to keep up high pressure in comb building. To prevent anything of the latter kind passing undetected, the judge should always insist upon sampling the contents of those sections it is proposed to award prizes to. Some persons resent breaking open the glazing, etc., for the purpose, saying it is not necessary, but my own experience at a large show, where sections which had been awarded a first prize were afterwards found quite unfit for food, proves to me the absolute necessity for this precaution.

Uniformity throughout the whole exhibit, together with a happy medium of sealing—that is to say, not too heavy to hide formation of cells, or too thin to properly preserve the contents—is desirable.

The honey should not touch the capping and thus give it a weeping or watery appearance, and when held up to the light the comb should be sufficiently transparent to show that it does not contain an objectionable thick mid-rib.

Colour of capping is a contentious matter in this class, for whilst a nice clear white is looked upon as the ideal, the pleasant light yellow of sainfoin honey sections has a very attractive appearance. Here, again, I would recommend, whenever possible, especially at large shows, that there be a special class for sainfoin sections.

Clean, well-filled sections, without pop-holes, empty or unsealed cells, with a good attachment all round, are the ideals to be aimed at, and in the get-up of sections for exhibition the careful and expert bee-keeper has a chance of showing his abilities, for whilst the appliance dealers have produced some very useful section holders, in both cardboard and enamelled tin, I think all will agree that the sections glazed by the exhibitor, with a neat lace edging, such as it has been our privilege to see at some of our shows, is a very effective proof of their taste and ability, and should receive due consideration in the award of prizes.

Unfortunately, whilst the lace edging of section cases improves the general appearance, it can also be used to cover up defective attachment to the sides, etc., and it has been found necessary to limit the width allowed, and a section showing less than 3½in. square of the comb, clear of the edging, should now never be allowed to take a prize. Although this is sometimes looked upon as a vexatious restriction, all concerned must be careful to see that it is strictly adhered to.

In a general way drone cells seem to give the best appearance to comb honey, but this should have little, if any, effect upon the awards.

(To be continued.)

AMONG THE BEES.

By D. M. Macdonald, Banff.

DYSENTERY.

Many causes for this at times somewhat common spring evil are patent to the average bee-keeper, or even the novice. It stands to reason when bees, short of stores, are fed up for winter with badly made syrup that they are not well provided with healthy stores. If the concoction is too thin and watery, if the sugar is badly dissolved, or if fed with the seeds of granulation present, we have in every case an imperfect food, an unhealthy food, which cannot perform its true function. Almost inevitably, after a long confinement from cold, bees fed on this will be troubled with dysentery in spring. A cold, draughty home, with too much space for a small community, will prejudice both the bees and the stores, and may also lead to this evil. Late-gathered honey from autumn flowers is often poor in quality when collected, and frequently turns sour and rancid, from the fact that it has not been ripened, on account perhaps of bad weather prevailing while it is being taken into the hive, or because a cold temperature hinders its sealing. Honey with too high a percentage of pollen does not keep so well, being apt to ferment, and for winter food there is too much "bee-bread" for the bees' well-being. If a colony for some cause is much disturbed during the season of repose, the excitement causes them to overload their systems with honey and pollen, thus causing bowel distension. A year with an overplus of honey-dew stored in the hive will be followed by a dysenteric spring in the apiary. These are some of the causes of this trouble among the bees, and knowing the origin goes far (and should, perhaps, go all the way) to prevent the inception of the evil.

In many seasons, although one or even several of these inciting causes may be present, no patent serious developments may follow if the spring is open and mild, because the bees will obtain opportunities for cleansing flights. Even then, however, there may be evil consequences, although they may not be so lucidly manifest at the time, as bees will often be weakened and disheartened to such an extent as to affect their will power and their eagerness for foraging and breeding. The nurses, too, may supply chyle food to the larvæ lacking in some essential particular, thus producing bees with weak constitutions. The bee-keeper knowing that the evils I have named are root causes of this trouble, can do much to prevent its development. Dysentery in its simple form is not, therefore, so much dreaded by the bee-keeper as it once was in the olden time.

Its presence in a malignant form is one of the scourges of apiculture. While in a mild case we can generally leave its cure to nature, and trust that a genial spring day, with its attendant cleansing flight, will bring about an almost magic cure, in a severer case I would advise that the bees should be put into a new or clean hive, on fresh combs if possible, or on sheets of foundation if weather permits comb-building to be engaged in. Supply the syrup lukewarm, and be certain that it is well made. Over and above this, I would prefer to requeen the stock. The old combs are a doubtful asset, and had better be done away with, as they may contain the seeds of further trouble.

Genuine *malignant* dysentery is, however, another thing. It is questionable if it should not be grouped with "Isle of Wight," May Pest, *Nosema apis*, Crawling Paralysis, and one or two other severe epidemical diseases, all as yet little understood. Dr. Zander has made a special study of this virulent form of dysentery, and he has exhaustingly described its development and progress. Dr. Maassen has also investigated this disease, and generally corroborates the findings of his brother scientist, especially with regard to the presence of *Nosema apis* in colonies thus afflicted. In both cases examination of the ailing bees showed the

chyle stomach to be milk-white, and frequently filled with *Nosema* spores. They were found to increase at a rapid rate, and literally riddled the cells of the gut so that it ceased to exist, and was at times evacuated with the excreta, when, of course, the bee died. In Switzerland, Dr. Burri has also been investigating this disease, and is able to confirm the findings of Drs. Zander and Maassen. His experiments show that Dr. Zander was right in differentiating the trouble as ordinary non-infectious, and malignant or infectious. The former, he says, is well known, and is caused by improper food, disturbance of the hive in winter, and too long confinement without a cleansing flight. In this form no bacteria or spores are found, but the case is entirely different where the malignant form exists; which, he says, is caused by this protozoon—our "Isle of Wight" "friend," *Nosema apis!*

The general verdict is that there is no cure for badly infected colonies, for once a bee is affected it *cannot* recover. I was much struck with the unanimity of the various findings in this respect, and they appear to me very much like the conclusions of our own scientists as recorded in the recently issued report on *Microsporidiosis*. In regard to symptoms, history, life history, experimental results, natural and artificial infection, treatment and prevention, the one record reads almost as a duplicate of the other. All agree that *Nosema apis* is the *causative agent!*

In view of the fact that Drs. Zander, Maassen, Burri, and Graham Smith all state that *Nosema apis* is often found present in healthy bees, that spores are not invariably present in numbers of affected cases, and that *no spores* of *Nosema apis* were found in specimens of my own diseased bees last year, might I again repeat my last year's suggestion that our investigators should keep "an open mind" during their further researches? It is acknowledged by scientists and practical bee-keepers alike, in spite of years of patient labour by many keen workers, that the bacteriology of the apiary is as yet little understood, and several long cherished beliefs are at present in the melting-pot. In a bulletin published last year, Drs. Phillips and White, of the Bureau of Entomology, Washington, both patient and advanced investigators, write: "There is very little definitely known about the diseases of adult bees. They have not been sufficiently investigated to make it possible to classify them with any degree of satisfaction." I admire the scientific mind which takes nothing for granted until it is proved.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE DUTIES OF AN EXPERT ON TOUR OF INSPECTION.

[8867] Besides the references to my article under the above heading that have appeared in "B.B.J.," I have received letters from several bee-keepers who did not wish to make a public statement. To these, generally, while thanking the writers, I should like to make a brief reply.

The only practical suggestion has been that the expert should, if possible, borrow on the spot the appliances for manipulation, instead of using his own. At first sight this seems sound enough, but I do not think it bears looking into, especially as regards the smoker. One of my correspondents, a well-known expert, believes that this instrument, though indispensable, is decidedly dangerous. When in the hands of a man who keeps it clean in the way recommended, and uses the smoker sensibly, I do not see the danger. It is presumed that he will not rub the nozzle against the frame-bars. If the idea is that spores will be drawn into the bellows I should suggest that if not expelled by the next blast they will have too hot a time of it to retain their vitality. The notion is fanciful.

Again, if the apiary is healthy, the expert can use his smoker without danger; if disease is present, about the worst thing the expert can do is to handle a borrowed smoker that may quite possibly be smeared with infected propolis or honey. On the whole, I should advise as follows: If the owner is to operate, let him use the apiary appliances; if the expert does the handling, let him use his own.

As to the weight of the outfit suggested, I quite admit that it would be heavy, but I do not see how to reduce it. As Mr. Crawshaw says, and as I myself hinted, the coming inspector will probably use a motor-cycle. Fortunately, these cycles are becoming cheaper and more efficient.

My expert correspondent tells me that the treatment recommended for foul brood, though quite to his mind, is in many cases impracticable, owing to the ignorance and obstinacy of bee-keepers, and that consequently he is driven into advising

palliations. But a lazy man will neglect the milder treatment just as completely as he would the stronger. In the expert's place I should recommend what I knew to be best and pray for the time when legislation shall come to enforce it.—H. J. O. WALKER, Lieut.-Col.

THE SKEP AND THE SKEPPIST.

[8868] Since Mr. Heap (page 422) does me the honour of bracketing me with Messrs. Crawshaw and Desmond as wicked reactionaries, I must, I suppose, take my share in the conflict, although I have no doubt that Mr. Crawshaw is doughty enough to more than hold his own in the encounter.

May I first of all remind Mr. Heap that the skep is an old-established institution which has, in days gone by, more than justified its exsistence as a home for bees? That being so, the onus lies on its attackers to prove that it is bad, not to ask it to continue to justify its existence. So far, nothing has been advanced to show that the skep, of itself, is any worse as a sanitary and sound home for bees than the bar-frame hive. Everything adduced so far goes to prove more and more that it is the bad management of hives which is the cause of the insanitary conditions found to exist so commonly.

In the issue of May 15th I made some attempt to show what a vast difference exists between the management of skeps and frame-hives. No one has ventured to question the accuracy of my definition, and it is, indeed, difficult to see how anyone can possibly fail to see that while the one method is suitable to the very humblest, both as to wealth and intellect, the other can only be successfully adopted by those who are endowed with more intelligence and also more cash. In most cases it is the latter which is responsible for foundationless frames and sections. Does Mr. Heap mean to say that those who cannot afford to pay for foundation—I admit it is illogical, but that is how I have heard them put it, often enough—or cannot grasp the complications of movable combs, re-queening, and so forth, are therefore to be denied the privilege of keeping bees, either for pleasure or to add to their scanty incomes? That there are those who cannot even properly manage skeps proves nothing against the skep. If they cannot manage those, how are they to manage frame-hives?

In every walk of life there are incompetents. If we forbade every man to do a job unless he could do it intelligently, we should have workhouses in every other street. Then Mr. Heap would have to criticise the methods of stone-breaking, which, I gather from those well qualified to know, is not always done with that intelligence which is desirable.

The season here was a very good one on the whole, although the clover was off all too soon. All the samples I have seen have been remarkably good in every way. – HERBERT MACE.

QUALIFICATIONS OF LECTURERS.

[8869] Your remarkable critic, "A Board School Boy" (page 426), if his cognomen belies him not, is a miracle of precocity, a paragon of correctitude, and the possessor of a nice discrimination of the intricacies of our language. I hope his "slating" will not break the head of the "lecturer and expert" who is indicated, though perhaps the sufferer may well take the instruction of a "School Boy."

Another critic, "A Believer in Efficiency" (page 415 of the previous number), is a marvel of courage, for he stalks the noblest game, and boldly "goes for" the "Examining Board" of the B.B.K.A., who, "if they see," his "remarks," ought to be wiser men. And, then, "these remarks" "may be the means of obtaining a more careful selection of lecturers." Next comes the council for its lecture, "*now* that the B.B.K.A. has entered an era of importance in the country." Even yet full execution is not done, for the writer's gun discharges shrapnel, and has a ball for each and every expert, first, second, or third class, already certificated, who is to have his certificate cancelled. Truly, the writer has the courage of his convictions!

I like his statement of the three qualifications for a certificate—"ability to speak the King's English correctly, absolute truthfulness in statements made"—no fibs, mind!—"and ability to answer questions." I fancy most candidates for certificates are under the impression that they have not suffered for want of testing in answering questions. But to hark back to the first qualification, this stickler for pure English actually writes this sentence (or so it is printed): "A lecturer (*whom* I afterwards learnt held the first-class certificate of the B.B.K.A.) was holding forth." If he omits the non-essential words, "I afterwards learnt," and reads the sentence again, he will see the necessity of putting the word "who" in the place of "whom." "Holding forth" is not the choicest English for a purist.—S. J., Glos.

[8870] I have read with much interest the letters which have appeared in the columns of the "B.B.J." respecting above. I must confess that the first communica-

tion complaining of the lecturer (a first-class expert) leaving the tent without giving the audience an opportunity of asking questions I disbelieved, and quite expected to read his denial in your next issue, but so far I have looked in vain.

As a lecturer of some little experience, extending over the past fourteen years, I can safely say I have never given a lecture without inviting questions, and saying, as the B.B.K.A. lecturer generally does: "The more questions you ask the better I shall like it." I sometimes spend more time answering questions than in giving the lecture, and I consider the man who does not give his audience an opportunity of seeking information from him fails entirely as a lecturer on bee-keeping.—COUNTY COUNCIL LECTURER.

THE QUININE TREATMENT FOR "ISLE OF WIGHT" DISEASE.

[8871] The letter of Mr. William Munro (page 437) regarding quinine may possibly confuse your readers a little and give them unnecessary doubts as to what they are getting when they go to the chemists for this drug. The substance sold as quinine sulphate, or frequently simply as quinine, is the salt called *basic quinine* in your correspondent's letter; this is scarcely soluble in cold water, and to dissolve it diluted sulphuric acid (in the proportion of one minim to each grain) must be used. This converts it into the other salt, called *neutral quinine* by Mr. Munro, but more commonly called nowadays quinine bisulphate. The latter salt, as well as another, quinine hydro-chloride, which is also readily soluble in water, can be bought ready prepared, and your readers will probably find the use of these more convenient, as there is no need for using sulphuric acid, with the possible danger of adding too much.

With regard to adulteration, fifty or more years ago the substances mentioned may have been used, but at the present time it is quite safe to say that the quinine sulphate sold in England is never adulterated. It usually contains small quantities of the other alkaloids that occur with it in cinchona bark, but the proportion in which these are present is, from a medicinal point of view, negligible.—HAROLD DEANE.

AYLES' CURE AND ROBBING.

[8872] Referring to the letter from "H. W.," Gravesend (page 437), and his experience of Ayles' cure, I have, since last writing, lost my favourite stock from the result of robbing. To stop the same calamity in another hive (whose floor-board has been treated with the cure), I have confined the bees to the hive, and they appear to be doing well. I have the entrance open about 3 inches, but cover this space with perforated zinc. Even so late as yesterday there were Ligurians from about two miles away trying all day to get into the hive, so that without the protection I had given another fatality would most likely have occurred.—T. K., Carshalton.

SUGAR FEEDING AND "I.O.W." DISEASE.

[8873] It is all very well for correspondents to write about our having ruined the stamina of our bees by artificial feeding; but, unless we return to the skep, what are we to do? The average surplus yield of honey per hive, taking good years with bad and good districts with bad, is, I suppose, somewhere about 30lbs.; and since each hive requires 30lbs. of stores for winter feed, I fail to see where the profit comes in for the bee-keeper, if he does not feed artificially.

Your Italian correspondent appears to overlook the fact that, in Italy, the winter is very short, while the honey-flow, at any rate in the south, goes on, I suppose, for eight or nine months. This is, at least, the case in Greece, where the surplus is taken about July 20th (after the last of the thyme) and the bees have three more months of scorching weather in which to build up again on natural stores—which are plentiful right away to the end of November.—H. CAMPBELL, Norfolk.

SLOW FEEDERS.

[8874] For slow feeding, I use glass honey jars with screw caps, but without cork wads. I punch from two to twelve holes in the caps, inwards, with a one-inch nail, cut a hole in a ½in. board, to take the inverted bottle easily, and screw on a strong piece of perforated zinc to support the bottle, and to prevent the bees from escaping. On the under-side of this, again, I tack on a fillet, ½in. square all round the edge which makes a bee-way. If a little over 3in. long, it will tap three seams of bees.

It takes a very short time to fill these bottles with warm syrup, and invert them over the hole, so that any drops may fall among the bees.—JOHN W. MOIR, Edinburgh.

BEES AT THE MOORS.

[8875] I have pleasure in forwarding to you the report of heather crop, which has been very satisfactory in this district, though am told by older bee-keepers than I pretend to be, that it is not a record one. Be that as it may, I am confident that those who were fortunate enough to

escape "Isle of Wight" disease and had their bees at the heather (despite the warnings which appeared in a local paper from some expert to keep their bees at home) will be more than satisfied with the returns, whatever may be the result later, as it was after returning from the heather last year that so many stocks around here died from "Isle of Wight" disease. I have been told of some exceptionally heavy takings, but am too modest to let everybody know about it, being also inclined to think that some bee-keepers can tell as good a yarn as any fisherman, as frequently when one asks a bee-keeper what the crop was like one gets the answer, "Oh, I had so many hundred pounds from one colony!" One is left to guess whether he is talking of extracted honey or comb: if extracted, it is one thing; if comb quite another. But there you have it, and must guess for yourself.

As exampled in your issue of October 9th, B. W. G., Wickwar, says, "I was able to take 400lbs. from twelve stocks." Yet again, R. Litman, in his notes, 60lbs. or 70lbs. from one hive. Others write in a similar strain, no reference being made as to whether it was comb or extracted honey.

Disease is still raging in this district, many stocks having suffered since my last notes appeared in your JOURNAL. One gentleman who has always accompanied us to the heather would not join us this year owing to his apiary being in close proximity to another bee-keeper, who, I am sorry to say, has lost every hive through "I.O.W." disease, (but not before he had taken all necessary precautions to protect his neighbours' bees, and tried on one hive one of the many so-called cures, without success, the stock being destroyed on Saturday last). To use this gentleman's own words, "Where my friend got it, I am just as liable to the contagion." Our bees were not long away when disease attacked his hives. I feel that we owe a debt of gratitude to this bee-keeper, as in all probability had his bees accompanied ours to the moors twenty stocks would have been infected.—W. C. B., Blantyre.

Queries and Replies.

[8839] *Keeping Bees in China.*—I shall be obliged if you will kindly give me your advice on the following queries in your valuable paper:—I bought two colonies in October last year. The owner told me that they were English black bees, but as I was only a novice, and there are no other bee-keepers here, I had no means of verifying his statement. The queens and drones have totally black abdomens, while the workers have two or three black bands on a brown or yellowish ground. They are small as compared with the Italian bees, so the queens rear drones in worker cells side by side with worker brood, and I am troubled with too many drones in the hives. Last April I bought an Italian queen, and put it in a nucleus of my black bees. After caging the queen for twelve days, the black bees still refused to accept her, and she seemed unwilling to stay among them, though I had been trying to release her several times. This surprised me, as I never found any bee-books mention anything like that experience. I was afterwards told by the man who sold me the Italian queen that the English or German, Cyprian or Carniolan bees cannot be Italianised. As the queen, after twelve days in the cage, died, I bought another Italian queen with a nucleus of Italian bees, and as I found the latter was too weak, I added a frame of sealed brood from the black bees, but the Italians never treated the young blacks kindly, and after hatching they were one by one driven out or killed by the Italians. On the other hand, the blacks from the other full colonies in my apiary were never friendly with the Italians, and as the latter were still weak, the blacks often attacked them, but generally came out worst after the conflict, as the blacks are smaller. I further found the Italians have this advantage over the blacks, in not having too many drones, which can only be reared in drone-cells, and, therefore, drone-rearing can be controlled. Seeing that the blacks cannot be Italianised, it roused my suspicion whether my bees are really English black bees or wild bees, so I enclose herewith a few dead ones, and shall be glad if you will kindly examine them and let me know their real species. I notice that in your country you all prefer the English black bees to the Italians, but as the blacks have the habit of producing too many drones, which cannot be checked owing to their being reared in worker cells, I do not see any good reason in keeping them.

During the swarming season last spring I made three nuclei from the two black colonies giving them each a sealed queen-cell, but only one virgin was mated in proper time, and now is flourishing very well, but the others both failed. I also put supers on the two parent colonies, which were still fairly strong, but I cannot get the bees to store honey in them; they remove all the honey in the supers, used for inducing them to go up, down to the brood chambers. I think this is because my place is lacking in bee-forage.

The Italians I bought are said to be the "Red Clover" strain. The queen has very dark red abdomen. The workers are large, and they have three black bands on

a red ground on the abdomen, the end of which is black. The drones are the same colour as the queen. The workers are more gentle than the blacks, but seem not so active. I often saw the pollen carried by the Italians dropped off on the alighting-boards, and the blacks came and carried the dropped pollen balls away to their own hives. Are they real Italian bees? Will you kindly let me know what you would advise if the blacks cannot be Italianised? And also please let me know if my other bees are real English black bees? Is there a way to Italianise such stubborn black bees successfully?—K. H. Chun, Tientsin.

Reply.—The bees you send are *Apis mellifica* certainly, and not wild bees, but they are not English blacks. We should say they are a native species. English bees do not rear drones in worker cells, except when a worker takes up the duties of egg-laying, or there is an unfertile queen in the hive. It is curious that the bees will not accept the Italian queen. English bees are often Italianised by bee-keepers here. The reason the bees carried the honey down was because they were short of stores. From your description, we should say you have got Italian hybrids. There is nothing special in the "Red Clover" strain, as all hive bees can work the second crop of this plant, although it is impossible for them to work the first. If you wish for Italians, your only plan will be to import stocks or swarms direct from Italy.

Bee Shows to Come.

November 20th, at Bromsgrove, Worcestershire.—Annual Show of Honey, Wax Honey Cakes, Candy, &c., will be held in the Drill Hall in connection with the Bromsgrove and District Gardeners' Association and Horticultural Society. Seventeen classes (twelve open to all). Schedules from Arthur Aston, Cemetery Lodge, Bromsgrove. **Entries close November 6th.**

BRIEF REPORTS.

As you invite readers to send reports of the honey season, I am very pleased to forward mine. It has been a record season here. From sixteen hives I have taken in sections and extracted 16cwt. of honey. My best hive gave me nearly 2½cwt. extracted honey, and three others about 2cwt. each. One swarm gave me ninety-five sections, and other 100lbs. extracted honey. The bees did all their work during July, as up to that time the spring and summer had been very wet. In July the weather was ideal for the bees, fine by day with heavy dews at night and abundance of white clover. I have been a bee-keeper for seven years, but never had so much clover honey before.—A. G. L., Bideford.

I have not had the pleasure of writing to the "B.B.J." before, as I only recently became a subscriber (I must add that I have received great benefit from reading it). I have been much interested in the "Brief Reports," and as I have not seen one from this district, I send a short account of the season, as we have experienced it. This district is not a good one for honey at the best, but this year it has disgraced itself. From the end of May to the end of July the bees did little else but swarm. Our best bee-keeper got 200lbs. from six hives, the take of another was as low as 30lbs. from four hives. For my own part my best hive gave me 20lbs., and as for the others, I am ashamed to tell you that their yield was between 5lbs. and 10lbs. per hive. There is one thing that I should like to say, and that is we have had no disease here yet, but, no doubt, it will pay us a visit some day. Wishing your paper the best of success.—F. N. C. M., Bromborough, Cheshire.

Notices to Correspondents.

J. G. (Cheshire).—*Lantern Slides.*—Lantern slides on bee-keeping can be purchased from Messrs. Newton & Co., King Street, Covent Garden, London, or Messrs. York & Co., 67, Lancaster Gate, Notting Hill, London, W.

J. M. B. (St. Austell).—*Wax Extractor.*—An article giving instructions for making a solar wax extractor is now in preparation, and will be published shortly.

B. C. W. (Norfolk).—*Faulty Wax Extractor.*—The extractor should not have been sent out made as you describe it. You will have to punch holes in it certainly. Thanks for Press cutting on "Isle of Wight" disease. It is much to be regretted that some people rush into print without any thought of the possible result of their statements.

Sweetstuff (Notts).—*Candy.*—We are afraid you make the candy a little too hard. You will have to take it off the hive and scrape the hard surface away to enable the bees to eat it.

Suspected Disease.

C. S. A. (Norwich), Novice (Cumberland), A. B. (Fladbury), and J. A. (Suffolk).—The bees have died from "Isle of Wight" disease.

Honey Samples.

Cornubia (Truro).—Both samples are beautiful clover honey, and are good enough to compete at any show. Though first class in colour, density, and flavour, they would be improved by re-straining to remove the tiny particles of wax, which detracts from their appearance. As the honey is so thick it may be slightly warmed to enable it to run through the strainer cloth more easily.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

THE CONVERSAZIONE.

(*Continued from page* 445.)

Honey in Frames.—Our fourth form of honey in competition is that of comb honey, shown in shallow or other frames. The idea in this class is to show that which may be considered the best means of producing good commercial honey in bulk, and as such combs are not intended to come to the table, as in the case of sections, it is necessary to judge it from a different standpoint; and what is of the chief importance is that an even and full surface is presented, so that the uncapping knife may remove all the capping from one side at a sweep of the blade.

The honey should, of course, be well ripened and in a good condition for extracting, but the actual quality, except that it must be of a good commercial grade, is not of so much importance as in the other classes.

The exhibits with the least number of pop-holes and best attachment to the frames will usually take a high position in this class.

Honey Trophies.—Our final form of exhibition honey, that which consists of honey trophies, is no doubt the most attractive and at the same time most difficult to stage.

The conditions which the schedule imposes upon the class must be carefully noted, as some show committees permit and encourage the use of flowers, ferns, etc., to embellish the trophies, whilst others strictly prohibit any extraneous decoration.

A trophy should be symmetrical and well balanced, and not in any way bulky or top heavy. Its general appearance should be graceful from all points to which it is supposed to be exposed to public view.

Monotony must be avoided. An exhibit composed of all one-sized bottles, if they contained ideal honey, would be inadmissible. A reasonable variety of the highest class bee products is most desirable. Thus a fair quantity of comb honey in really good sections, and some little variety of colour in the liquid honey, together with samples of granulated honey, all in a variety of shapes and sizes of bottles, go to make a really attractive display, and one upon which the eye loves to linger.

Where the schedule allows wax, or other accessories, these must be considered in making the award, and the general excellence of the exhibit must not escape attention.

It is desirable that some indication should be given in the schedules as to the maximum and minimum weight of honey to be staged on a trophy, otherwise it is necessary to take into consideration the amount, a large exhibit being more difficult to produce and stage than a much smaller one.

Method of Judging, &c.—Having dealt with our first two heads, we will now proceed to consider the third, *i.e.*, "The Method of Judging."

The show secretary should take care that a schedule, giving full particulars of classes and rules applicable to the same, has been sent to the judge selected, in due course, so that he may have an opportunity of noting any special classes or conditions. Most judges will also appreciate a remainder, say, a couple of days before the show, enclosing admission ticket, and giving the exact time his presence will be required.

If, as is not unusual, the judge has some distance to travel, a little consideration upon this point, and consultation of the current time-table will be helpful. For a person who is habitually punctual it is anything but pleasant to be put to considerable inconvenience, and perhaps the necessity of rising before the usual hour, to get to a show at the time suggested, say, 10.30 a.m., and upon arrival to find everything in a state of chaos and the exhibits not ready for his inspection until, say, 11.15; whereas, if his arrival had been timed for eleven o'clock a quicker and more convenient train or route might have been used, and the original starting time have been a couple of hours later. It is objectionable and unpleasant for a judge to be on the ground, and practically *compelled* to see the exhibitors staging their exhibits, building their trophies, &c. An impartial judge prefers those arrangements which preclude the *possibility* of identifying owners of exhibits.

Presuming the judge has arrived and everything is in readiness for his inspection, the secretary, will provide him with his badge of office (which some judges preserve as souvenirs of duties often performed solely for the love of the work) and a judging book, in which each class is shown on separate pages, giving the number of entries in each and having a perforated duplicate which may be torn off for each class as the work progresses, so that the secretary can proceed with marking the prize cards, &c. A bowl, or bucket of water and a towel should also be provided to enable the hands and clothes to be kept in a presentable condition. A glass of water, or soda water, and a biscuit are also often found useful in cleansing the mouth and palate when so many different lots of honey have to be sampled.

Personally I consider the disqualifica-

tion of liquid honey owing to its being shown in a wrong *colour* class, or sections, through being over-laced, should be considered the business of the secretary and stewards, such gentlemen being, of course, non-exhibitors; and as such disqualifications are founded on fact and *not* on anyone's opinion, this arrangement will save judges' time, and disqualification cards can, unless it is deemed undesirable, be placed upon each of these exhibits stating why disqualified. I always enquire whether or not this question of disqualification is to be part of the judge's work, and if I am informed that these points have already been dealt with, take it that all the exhibits, unless otherwise indicated, are in order.

These points being settled, the judge will proceed to his duties accompanied by the steward, who will render assistance by taking off and replacing the caps, glazing, &c., as no other person should be allowed to be moving about, distracting the judge's attention from his duties, &c.

The question of judging by points has frequently been discussed, and whilst this method is necessary, it is obvious that in a fairly large show a hard-and-fast rule of submitting *each* exhibit to such a test is quite impracticable. I recommend judging by rejection and selection, and a judge of experience coming to an average class will, upon little more than a casual glance, be able to reject forty to sixty per cent. of exhibits as having not a shadow of a chance of being amongst the prize-winners and upon a little closer examination, say, for density, &c., a further percentage will be discarded. The remainder will now consist of those from which the winners will be selected, and will be proportionately greater in accordance with the general excellence of the class, and points will be necessary to allocate each to its respective place.

My table of points for run or liquid honey is as follows:—

Flavour	30
Colour	25
Density	20
Aroma	10
Uniformity and Get-up	15
Total	100

Each of these items has already been dealt with. It may, however, be pointed out that it is helpful to a judge, for obvious reasons, if the exhibits are arranged in such a manner that he can view them from the rear as well as the front. In making the final selection, the chosen bottles should be brought alongside each other in a strong light.

In testing liquid honey for density, the old system of inverting the bottle is not so satisfactory as stirring the honey with the glass honey taster, and here again experience counts strongly, as a practical person can judge very accurately by the quantity which adheres to the glass when withdrawn from the honey as to its relative density.

Granulated Honey.—When dealing with granulated honey the points for prize winning will be different and the question of colour more a matter for the judge's discretion, as all present are aware that when honey granulates it frequently changes a great deal in this respect. A nice, even cream colour, or light yellow should receive full marks.

My points in the granulated honey classes are:—

Flavour	30
Colour	20
Granulation	25
Aroma	10
Uniformity and Get-up	15
Total	100

Sections.—In judging sections, the view from the rear is even more desirable than in the case previously mentioned, because a casual glance under such circumstances will enable a judgment to be passed upon their uniformity, and imperfections in sealing, &c., are easily seen without one having to turn each section round. And again, any signs of granulation or patchiness, which are great defects in this class, are more easily detected.

Prize sections, as before remarked, must be sampled by the judge, mutilation of the comb, however, is not advocated; that admirable adjunct to judging, the "Reid" honey-taster, enabling one to do the needful without damaging the sections for further show, or sale, purposes.

My marks for final selection of prize-winning sections are as follows:—

Flavour	30
Colour and cleanliness of comb surface	20
Uniformity and clearness when held up to light	20
Quality of capping, including attachment to wood	15
Glazing and general get-up of exhibit..	15
Total	100

Honey in Shallow Frames.—Here, as already mentioned, the quality of the honey is not so much under consideration, so long as the judge satisfies himself that it is genuine and of good grade, the question of quality is not of so much importance, neither does the colour of the capping matter so much as in the case of section honey. A table of marks in this class would be:—

Complete sealing and evenness of surface	50
Absence of pollen, and suitability for extracting	25
Cleanness and general appearance	25
Total	100

Honey Trophies.—Finally, with regard to honey trophies, little need be added to what has already been said respecting this class. If the remarks applicable to the

various parts of the exhibit are complied with, the experienced judge will have little difficulty in awarding the prizes in a just manner. Whilst variety is very essential, if an exhibitor has not a sufficient sample of each kind of produce of a show quality, the entire absence of lesser quantity of that particular object is better than the lowering of the standard of the whole exhibit by the presence of an inferior article.

The practice of having compound classes (except in the trophy class), that is to say, classes in which so many bottles of liquid honey and so many sections are staged and judged together, is not to be commended, as it often happens that one portion of the exhibit is so different in quality to the other, that an ordinary all-round *fairly good* exhibit may gain a prize, and really good stuff have to be passed over, or, owing to the excellence of one part being so high some inferior produce may appear in a prize lot and give wrong impressions to the general public.

If any attempt at fraud or dishonest practices is noticed, the person making such discovery should at once report the same to the show authorities, and not wait to see whether or not the judge will find it out.

When the judging is completed and all concerned have done their *best*, we may find that some discontented exhibitor would like to discuss, and even revise, some of the decisions. Some good-tempered judge, if time permits, may gently, *but firmly*, take such an one in hand, and point out that until our show committees have funds sufficient to give every exhibit a prize, there must be losers, and as there are, inevitably, under present conditions, more blanks than prizes, it behoves him to become a *cheerful loser*; to try and try again, ever remembering that one's produce nearly always looks so much better than it really is until placed alongside its competitors on the show-bench.

The numerous candidates now taking the examinations for the B.B.K.A. expert's certificate is, I think, a happy augury, because while so many are willing to study and work for this coveted honour, there should also be many aspirants for the post of judge, and if this lecture proves helpful in stimulating any such, it will not have been delivered in vain.

(*To be continued.*)

LEICESTERSHIRE AND RUTLAND B.K.A.

The autumn conference of the Leicestershire and Rutland Bee-keepers' Association was held at the Higheross Restaurant, Leicester, on October 18th. Mr. H. M. Riley presided, and there was a large attendance.

The medals and prizes won at the Abbey Park Show were presented by the Chairman, and Miss C. Wilkinson, of Market Harborough, gave a very interesting paper, entitled "My Experiences as an Amateur."

In the evening an interesting and instructive lecture on "Bee-keeping in Other Lands," illustrated with lantern slides, was given by Mr. W. Herrod, F.E.S., the Secretary to the British Bee-keepers' Association. Mr. H. M. Riley again presided, and the lecture was greatly enjoyed by a large company.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of October, 1913, was £3,949.—From a return furnished to the BRITISH BEE JOURNAL, by the Statistical Office, H.M. Customs.

BEE-KEEPING IN BRITISH COLUMBIA.

By F. Dundas Todd, Victoria, B.C.

Being one of the Foul Brood Inspectors of British Columbia I am frequently asked as to the apicultural possibilities of the province. These communications come chiefly from old country settlers who have just landed, or from those who are contemplating a change to a new land. Until recently I have been exceedingly cautious in answering such enquiries for the very simple reason that I had really no reliable data to go upon.

The territory under my care is a very large one, being about 150 miles in length and twenty miles in width; in fact, it is a strip of land on both sides of the mighty Fraser River, near whose mouth is located the city of Vancouver. In this belt live almost three-quarters of the total population of British Columbia. It is my duty to call on every bee-keeper in this immense district, even if he owns but one colony housed in a fruit box or nail keg, to see if his bees are in a healthy condition and to give him elementary instruction in the art of bee-keeping.

For five months each season I work among the bee-men. During April I hold demonstration meetings in the districts that have been thoroughly worked in previous years, the rest of the season I devote to new territory, and in answering hurry-up calls from those in trouble. I know every man or woman (yes, we have lady apiarists) who is honestly trying to learn the art, and they know that my time and knowledge are at their disposal. The moment one of them strikes a snag, all that he or she has to do is to drop me a

note, and I will answer by mail or in person as seems best to me. In a scattered community, such as we have, men travel much, and everybody knows somebody in every part of the province, no matter how far away. On the trains, river boats, and rural electric cars I am all the time meeting bee-keepers, and many a lesson have I given in such situations. It is all needed, for while there is under my care probably close on a thousand bee-men, owning six times that number of colonies, I would hesitate to call a dozen of them good bee-keepers.

And there you have the reason for my hesitation. The province looked good enough to me, but the bee-keepers were not raising satisfactory crops. When I enter a bee-yard I first want to learn the number of colonies on the stand in April the previous year, then how much honey was actually taken from the hives in the fall. Once I have been through the district I send in to headquarters a report in this style:

Lulu Island, colonies, Apr., 1912, 208. Crop, 5,263lbs. Average, 25lbs. Bee-men, 1913, 36.

Delta, colonies, Apr., 1912, 506. Crop, 16,056lbs. Average, 31lbs. Bee-men, 1913, 78.

These figures go into the agricultural statistics for the district, so that anyone contemplating bee-keeping as a business may have some idea as to the possibilities of any particular region.

In my April demonstration trip, I endeavour to learn the crop of the year before. The figures are never complete, as I fail to get in touch with all the bee-keepers, but I never guess a man's crop. If I get no definite figures I credit him with no crop at all, so as to err on the safe side. These statistics tell me and the department whether or not instruction in apiculture pays. Here is the summation of the districts worked in 1911 and 1912:

	lbs.
1912 crop	16,733
1910 crop	4,500
Gain	12,233

Of course, much of my 1912 efforts did not show results, as I did not get in touch with the majority of men visited that season until too late to influence the crop returns. On the other hand, these figures must be increased by about 4,000lbs. of gain that resulted directly from my efforts in May and June, 1911.

Put another way, the average colony production in my territory in 1910 was about 19lbs.; in 1912 it had trebled, where I had been at work, but remained practically stationary in the regions that I had not visited.

In the season that has just closed, both territory and bee-men visited show a better average than I had formerly experienced, probably because it is an older settled region. Furthermore, in each district there is at least one man who knows what he is doing, and his results have considerable influence on the general average. From these men I have been able to get definite facts ranging over at least a score of years, and they are rather interesting:—

(1) There has been no honey failure in my territory since 1897.

(2) An average crop of 100lbs. extracted from thirty-six colonies in a backyard has not been uncommon. Best season, 196lbs. average.

(3) On account of wet spring and summer, the season of 1913 looked most unpromising; in fact, I expected a complete failure, but the apiary just mentioned produced an average of 60lbs. Generally speaking, the clover districts yielded a two-thirds crop.

(4) The fireweed districts in 1913 gave the efficient men almost 100lbs. Between Vancouver and New Westminster lie at least a score of square miles of this fine honey plant, and at no distant date I hope to see hundreds of men making a comfortable living from the tons of nectar in this region that are now going to waste.

The figures I have given justify me, I think, in asserting that British Columbia offers excellent opportunity for really good bee-keepers who will readily discard all past habits and customs, and set themselves to learn the new conditions. Let me be frank and say plainly that my greatest worry is the Englishman who will persist in doing things as he did them at home, and who will not listen to a new idea. One such ran a fine apiary of sixty colonies down to a dozen in two years, yet all round him the humble farmers who knew little about bee-keeping were getting 20lbs. to 30lbs. a hive.

When I enter a district for the first time it is my business to learn its floral conditions. Most of the information is got by personal observation, as I find few men who really know what flowers are visited by the bees. Once I know the nectar-bearing plants I plan the work of the year. Broadly speaking, the following will fit seventy-five per cent. of my territory.

September 1st. Make sure that the bees have the equivalent of six combs of honey in the hive, then see that the hives are watertight.

March. Clean bottom-boards.

May 1st. Put on second story of brood-combs to give queen plenty of room to lay.

June 21st. Put on third story for surplus honey. Put on fourth story when necessary.

August 1st. Extract in clover district.

September 1st. Extract in fireweed district.

Whenever bees hang out at night, enlarge entrance. If necessary, raise front of hive, if that is not enough, raise rear of hive also.

The above calendar has been in use practically for two seasons, and, so far, has been ideal. When I took charge of the territory, swarming was rampant, now many men are wanting to know how to get increase to make up for winter losses. I know several apiaries of twenty colonies and more where not a single swarm has issued for two years. I am inclined to hope that swarm prevention in British Columbia is easy, but I must not crow too soon.

Of course, I am dealing mainly with farmers, so in drawing up this calendar I was thinking more of the bee-keeper than I was of the bees. I knew his conditions, and was well aware of the fact that not one in fifty would ever think of looking for queen-cells or anything else, so I chose dates he would easily remember, but which at the same time fitted in with the orderly development of the hive. The June date may look rather late, but has not been so the last three years, for although clover blooms at the end of May the bees do not work on it until about the first of July.

The season's crop can be sold in bulk in Vancouver for sixpence per pound. When packed in glass jars it will bring at least twopence more at wholesale. The province imports at least 80 tons of honey yearly from foreign countries, and considerable from Ontario, so it will take much increased production to satisfy local demands. Besides, much of the imported honey has not the flavour desired by the consumers, who have been accustomed mostly to clover, fireweed, and basswood honey.

British Columbia, so far as I know, is free of foul brood. We have had a few scares, always due to settlers bringing in bees, but the hives were destroyed by fire at once. There is no need of anybody bringing in bees, as the woods are literally full of them. Furthermore, the province will put every colony into quarantine for nine months the moment it enters, no matter where the owner wants to settle, and as a consequence the transportation companies hesitate to carry them. As a matter of fact, no bees have been brought into the province since the Foul Brood Act was passed.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

CARNIOLAN BEES.

[8876] I was pleased to read your correspondent's opinion *re* "Carniolan Bees," (page 424, 8847), for, despite all that has been put forward in evidence against this race, I must own to a sneaking regard for them. Admitting their besetting sin, *i.e.*, swarming, are there not other qualities characteristic of these bees which in some circumstances more than compensate for this defect? In my experience, and I find the "Guide Book" supports me, there is no race equal to it for its wintering qualities, and these are by no means the least desirable to strive to perpetuate. In this district, situated as we are on an exposed part of the sea coast, with the prevailing spring winds off the sea, only the hardiest bees survive, especially with those who fail to feed liberally and wrap up warmly, and the death roll in the spring is usually heavy, the chilling winds at this season completing the weakening effects of the long, trying winter. It is here that the wintering qualities of the Carniolan race stand out most conspicuous. Further, the cold spring winds, which generally stay with us until June is half over, hold in check their swarming tendency (swarms here rarely issue until early July), yet when the warm weather does arrive their prolificness and vigour enables them to build up rapidly. I have had several queens of this race, the first of which equalled, and was never excelled by, any of my natives. The first time of wintering I packed down eight frames strong, and was agreeably surprised in the following spring to find hardly any diminution of bees. It would appear to be a desideratum to endeavour to infuse more of this quality into our native race. If mating could be controlled as in the case of our fowls and domestic animals, this might soon be accomplished by careful and judicious selection. Failing this, we may hope that the comparatively few Carniolan queens and drones which are kept in this country may exert a beneficial effect in this direction on our native bees, for, after all, the question of relative swarming qualities is a matter of strain as well as of race, and much native "stuff" would have to be destroyed before it could be said that these latter were not prone, as a race, to the pernicious habit of excessive swarming.—J. W. Mason, Withernsea, E. Yorks.

QUOD HOC SIBI VULT?

[8877] Workers carrying pollen, and drones flying in November. On page 440 I see two correspondents are somewhat concerned about drones flying in October. On November 5th, I noticed a number of drones flying from one of my hives, real drones, as per enclosed sample. I watched the hive and saw five drones come out before one went in, and lots of the workers were carrying pollen. Upon examining the ground in front of the hive, I found two dead drones and a dead queen (enclosed), and would like to know whether she has been fertilised or not; she is very small. It was a beautiful day for November, the sun shone for over four hours, and the thermometer just reached 70deg. Fahr. in the sun, bees were flying from all the hives, and all carrying pollen but one stock, which stands in the shadow of the house. The pollen was a light pale yellow, I believe from mustard. The season has been exceptionally good here, and if breeding is still going on, they are laying a good foundation for 1914.—W.P.L., Baldock.

[The queen is a fertile one.—EDS.]

THE DUTIES OF AN EXPERT.

[8878] May I venture to make a few remarks on above, founded on some fourteen or fifteen years' experience as a "touring expert" in various parts of the country?

I had the pleasure of touring in Devon some years ago, when I was given the code mentioned by Colonel Walker. I still have it by me. It contains some valuable suggestions which were very useful, and some of which I still act upon when touring.

I wonder how many bee-keepers have any idea of the work of an expert? I would like to reassure those who are afraid of compulsory inspection under a Bee Diseases Act, and whose idea is that if we had such an Act inspectors would be sent round to inspect every apiary and stock at least once a year. In my opinion, such a proceeding would be found so costly as to be impracticable. One man would only be able to work a comparatively small area, as every stock would need to be thoroughly examined. This would take on an average at least ten minutes for each one. I find that when touring I can visit an average of five apiaries a day, and then do not examine every stock. I do not think a Government inspector could do much more if every apiary was visited. Not only would he have to examine every stock, but there would be the difficulty of locating the apiaries, as there would be no "list of members." I leave your readers to judge how long it would take a man to do a county or district.

Touring as expert is not by any means easy work, especially when done on a push cycle, as a certain amount of gear has to be carried. In that matter I think Colonel Walker errs on the heavy side. A motor-cycle and side-car—or, better still, a cycle-car—would be a great help. Unfortunately, the remuneration of an expert will not allow such luxuries. The first cost of even a secondhand motor-cycle would probably exceed the total amount received for one tour. There would then be Excise and driver's licences, also running expenses, which are about 1d. per mile for cycle and 1½d. for cycle and side-car. When the tour was finished the machine would quite likely be more or less of a "white elephant." In most associations the expert is paid a fixed sum per visit, and in some cases the work is to a great extent a "labour of love." Unfortunately, nearly all county associations are hampered in their work by lack of funds, and the remuneration of secretaries and experts, whose work is the most important to the well-being of the association, is not nearly as good as it should be.

Some of the articles mentioned by Colonel Walker I never carry, and still have a load that makes its presence felt, especially uphill, and towards the end of a day's work. My cycle is not of the motor variety, or suitable for a racing track, and every extra ounce of weight tells. One or two items that are necessary are omitted a mackintosh cape and leggings, a sleeping suit, and a change of underlinen, &c. Although I go through my outfit each spring, and discard everything not absolutely necessary, I still find there is enough to require an 18in. bag on front carrier and a fair-sized basket on the back.

When disease, or a suspicion of disease, is found the owner should not only be informed of the fact, but, if possible, shown the symptoms of disease, so that he may be able to detect it himself in the future. I do not agree with Colonel Walker's advice to close other hives when examining a diseased stock. The returning bees, not being able to get into their own hive, would fly round for a yard or two, and quite likely alight on comb or hive under inspection, whereas if their own hive is left open they will fly in and out, attending to their own business.

Regarding the work that should be done by an expert when working for an association, that should be left to his own discretion. He should not be expected to undertake long operations. Most associations have a notice in their annual report to the effect that the expert is not ex-

pected to do the work, but to give advice. This prevents the expert being imposed upon. It very often, however, takes less time, and is more useful to the bee-keeper, for the expert to *do* certain work than to explain how it should be done. I find also that as a rule members are quite willing and pleased to pay for extra work done.

I often ask the owner to do the manipulating. My only objection to it is that it is very difficult to see the small unsealed larvæ clearly enough to detect symptoms of disease when another person is handling the frames.

Cards similar to those referred to by Colonel Walker for notifying disease were supplied by the Devon Association. I have brought them to the notice of several other associations, who have adopted them. As to the advice given in cases of disease, no hard and fast rule can be laid down, especially in cases of brood diseases- much depends on circumstances. Before giving advice as to treatment I first inquire if there is any disease known to be in the locality. If there is, and the owner of the diseased stocks will do nothing, it is very little use other bee-keepers adopting the B treatment, as his stocks are sure to be reinfected, as I know only too well. Any stocks that are bad should be destroyed, and the others treated with Apicure and naphthalene, and, when fed, medicated syrup should be used. The disease may thus be kept at bay, or even cured. The difficulty often is to get bee-keepers to keep up the supply of disinfectant as it evaporates. Should the locality be free from disease, and an odd stock be found infected in the apiary under inspection, I generally advise its destruction. This is safer than to risk infecting other stocks while attempting to cure the one. Should anyone attempt Colonel Walker's treatment (B) on page 394, I am afraid he will not have many bees left to hive. I presume frame-hives are referred to, and the bees from even one such, if confined in a skep, as stated, will be in great danger of suffocation. If two or three lots are united, as suggested, they are certain to be suffocated, even if they could be crowded into a skep. It would be better to keep them separate until rehived; also keep the skeps in a dark, cool and airy place indoors, away from other bees, and turn them with the cheese-cloth (bottom of skep) upwards. In this way the warm, vitiated air can escape. The skeps may be placed as directed by Colonel Walker for ten or fifteen minutes before releasing bees, to allow them to cluster in top of skep, and so that the dead bees may be dealt with. These should be *burnt*—do not *bury* any infected matter or material until it has been *burnt*.

As regards all the details enumerated by Colonel Walker as to making notes, leaving literature, &c., these are all ideal if they could be carried out. Printed matter is too heavy to carry in any quantity, and an expert has not the time to make elaborate notes of every visit. There are other members waiting to see him, possibly staying home from work for the purpose, and it is a great disappointment to them if the expert is hindered and unable to get there. It is well to keep a diary to enter up anything worth noting - the weather, &c. but this can be done in the evening.

With Colonel Walker's remarks as to disinfecting appliances, &c., I heartily agree. Many times I have known bee-keepers astonished at the expert disinfecting himself and appliances; they had no idea the disease was so infectious, and it causes them to think on their own methods. Gauntlets I never use on tour. I prefer taking off my coat and pulling up the sleeves of my sweater.

I am afraid I am taking up too much space, or would give a few experiences I have had when "on tour," but these must be left to a future number. One piece of advice I would give budding "touring experts": Leave your politics and religions creeds at home. Bee-keepers are of all shades of opinion on these matters, and I have known an expert who entered into a political controversy with a member he was visiting end by being ordered off the premises.—J. Herrod, Trentside Apiary, Sutton-on-Trent.

INSTRUCTION IN BEE-KEEPING.

[8879] With reference to Mr Flashman's article in the "B.B.J." of October 30th (page 433) on "Instruction in Bee-keeping," for one who knows Barnet so well and its bee-keeping history it seems difficult to imagine that Mr. Flashman should have experienced so much difficulty in obtaining the necessary information on the subject mentioned above.

Barnet possesses to-day an active bee-keeper who has kept bees in that district for nearly forty years, not only so, but he has been a regular reader of the "B.B.J." from its incipience, and he is therefore conversant with all modern methods of apiculture. So well known is this gentleman to all who have kept bees for any length of time in that district that it is not necessary for me to mention his name.

If I remember rightly, he gave advice both to Mr. Osborne and Mr. Flashman, the promoters of the present Association, when they started bee-keeping, and he could not have done so without mentioning the "B.B.J.," which he holds in such high esteem. Whilst I do not for one moment

wish to depreciate the good work done by Mr. W. Herrod, our County Instructor, and Mr. Flashman in working up the present Association, it is only fair to remember the veterans who have perpetuated the fascinating craft of apiculture.—F. W. Harper, Watford, Herts.

MILDNESS OF THE WINTER.

[8880] It may interest your readers to know that there is great promise for next year in the way of hedgerow bloom-buds. My apple trees, pears, and plums are covered with buds, and in the course of a long walk I looked closely into the state of the hedges, and found them in the same promising condition. The kinds examined were crab, hawthorn, and blackthorn. The buds are not only plentiful, but well developed.

This promises a good start in early spring. If the weather will let the bees work, 1914 should be a good year.—Wiltshireman.

CURIOUS EFFECT OF A STING.

[8881] Seeing the letter of "C. E. F." in Bee Journal (page 438), I thought it might interest readers to hear of an experience of mine last August, and it also might serve as a warning to others not to attempt handling bees with inadequate appliances.

I was attempting to drive a skep, and only had some rough pieces of wire to serve as driving irons. The result was that it took so long to fix the empty skep and to commence driving that the bees had quite got over the surprise of smoking and turning up, and became furious and quite unmanageable. I had many stings on the hands, all but one of which I treated with my usual contempt.

The one in question was delivered near the joint of the thumb near the wrist outside the hand, and hurt considerably more than all the others together This has lasted until the present time, though it is not so acute. The interesting (?) part is that from the time of receiving the sting until now, the stung part, when pressed, is like an electric button, sending a current to the thumbnail base, about which part there is still a more or less numb feeling.

I put it down to having been stung on a nerve, but am not anatomist enough to be sure. I have never met one who has had a similar experience, and thought it might be interesting and also might solve my difficulty in determining why the effect of this sting is so lasting. There is no outward sign of injury.

I am a regular reader of your journal, and have been for years, and am much interested in it.—W. R. M., Kent.

WASPS AND "I.O.W." DISEASE.

[8882] It will be within the recollection of many Bee Journal readers that in my letter to the Editor last year, describing the loss of my bees from "Isle of Wight" disease, I mentioned that wasps also attacked them and themselves became infected and died by the hundred.

This summer I went round the hedgerows and banks as usual, to hunt out the nests and mark them for destruction. Wishing to use cyanide of potassium for the purposes, it was some days before I could procure it, and on going round the second time I found three nests were dead. I took the trouble to dig one out, but did not find a single live wasp in the nest or outside, though there was plenty of brood in all stages. The nest was about 6 inches across, and consisted of six or seven slabs of comb. The question arises, did these wasps die of "Isle of Wight" disease? It would be interesting to know if any other bee-keeper has met with a similar experience.

The honey season has been fairly good for the few stocks that are left in the district; one stock that I have the management of gave two swarms and about 30lbs. of honey.—E. E. Smith, Southfleet, Kent.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Hive Stands (p. 392).—Users of independent stands will, nō doubt, agree with "D. M. M." that these are the best. Like most other hive fixtures, such stands have advantages and disadvantages. When I used them, I had squares of flagstone carefully levelled in permanent positions. This answered very well, and overcame the objectionable levelling and arrangement. But I have now removed all the hive-legs, and should be glad to hear from anyone wanting a few substantial hive-legs cheaply. In their place I have adopted gantries made of planks on edge, measuring about 6in. by 1in. and 12ft. long. These are nailed to short tarred posts driven into the ground. The posts project sufficiently to take the width of the plank when level. Two planks are placed about 15in. apart, and strutted by short lengths of the same material. The posts are then driven in the corners thus formed, and the gantry nailed to them. Such a gantry easily takes six hives, and a nucleus can be inserted anywhere between at a moment's notice. The hives can be easily slid along to a fresh position without the trouble of levelling, and are always in neat rows. When hives are moved about, as to the heather, legs are objectionable, and where they have permanent positions legs do not seem essential.

The Duties of an Expert (p. 402).—I am unable to appreciate the difficulty, of which so much is made, of the examination of stocks in skeps. In the autumn it is particularly easy. Breeding has then practically ceased, and if the stock be healthy the brood portion of the combs will be free from cappings, whilst the sweet scent and thrifty condition of the hive will be readily noted by the experienced man. If the skep be turned up, in just such an examination as that outlined by Colonel Walker, that portion of the combs in which disease might be expected is now the most accessible. If disease seriously exists, the tell-tale signs will advertise themselves. Even if there were any doubt as to health, I would point out that a skep is as amenable to treatment as a frame-hive, if there be truth in the claim for infallibility of certain remedies. Anyhow, I have never yet known a mixed apiary in which the frame bees were healthy whilst the skep bees were diseased. No doubt such may exist, but I have not come across them.

Judging (p. 404).—Mr. Litman voices very reasonably the demand of the exhibitor for efficient judging. But it would be a pity for the impression to spread that judging is generally inefficient. Very good and careful work is done at the well-known shows. The trouble mostly occurs at local flower shows, &c., where some supporter is, for fear of offence, regularly asked to officiate. There should be no difficulty in obtaining good judges. They exist in most counties, and must be known to association secretaries. Practical experience, as producer or even as buyer, is wanted for the post. The man who has not produced and put up good exhibits is seldom qualified to appreciate the finer points of exhibition. And a judge should have sufficient courage not to fear criticism of his awards. He should be willing to discuss his awards, in reason, with the exhibitor with a view to helping him. Mr. Litman's suggestion of separate classes for sainfoin and clover will be readily supported by judges of experience, and may well find expression at the larger shows. The difficulty of increasing classes at small shows is only too often a serious question of expense. Exhibitors might encourage their fellows to exhibit; some of them have never thought of doing so.

A Sealed Book (p. 423).—Mr. Heap takes perhaps considerable liberty with Colonel Walker's remark. As I read it, it was not intended as a recommendation to the expert of procedure to be followed. The skeppist would naturally and properly object to such treatment. Most cases of foul brood can be detected by the typical cappings. Mr. Heap's hypothetical case might be missed. But no great harm would be done. Such a case might be missed has, no doubt, often been missed, even in a frame-hive. But Mr. Heap makes the usual mistake of supposing that defence of the skep means advocacy of fixed combs. I see no difficulty in fitting a skep with two, or perhaps three frames, on Gravenhorst lines. With these examination would be simplified, and if they contained no disease, a certificate of health might be safely granted. Mr. Heap also draws a very unfair inference that I have suggested the "adoption" of skeps by anyone, fool or otherwise! I have not done so, nor have I made favourable reference to the box or barrel-hive of New Zealand or Timbuctoo, but only to the old English skep, which has at least served so good a purpose in preserving for us the native bee.

The "Fool-proof" Skep (p. 423).—Mr. Heap is evidently unprepared to "suffer fools gladly." In this my sympathies are entirely with him. The term "fool-proof" is, however, well recognised, and does not imply that the man protected is entirely a fool. I am glad, too, that I did not assert that the skep was entirely fool-proof, or Mr. Heap might have had better ground for his criticism. Nothing, presumably, is fool-proof. Fault *might* even be found with my own most lucid statements. It is, however, easy to add to Mr. Heap's somewhat short "list" of the fool-proof qualities of the skep. He properly notes the absence of queen-killing, due to clumsy handling of combs, &c. In addition, combs cannot be exchanged and disease thus communicated. Foolish spreading of brood is impossible. The winter nest cannot be interfered with. The combs remain properly spaced. They cannot be left out to start robbing. There are no quilts to be forgotten, &c.; the entrance is not subject to foolish mistakes. The list might be added to, but is sufficiently long to enable Mr. Heap to understand what is meant. For the instances he gives miss the point, and might, as he points out, equally happen to the frame-hive. The absurd case of driving which he gives was clearly the work of a frame-hivist. No skeppist would strengthen a skep stock in this way. Mr. Heap possibly allows his prejudices to outrun his discretion when he speaks thus of a "strong colony" on "foul broody combs." It may be true, but merely serves to remind one of the point raised by Mr. Desmond of the comparative defensibility of the skep. The case itself, however, is utterly irrelevant, since a frame-hive would suffer even more under such treatment. There was just a chance that the bees might have made good in the skep. But this is all beside the mark, for I

am only concerned with the endeavour to fairly discuss the serious skeppist, and not anyone given to playing the fool with bees.

Queries and Replies.

[8840] *Grub in Hive.—Destroying Bees in a Roof.*—(1) I am much obliged for the BEE JOURNAL of the 16th inst., with the answer to my enquiry, and for the "Guide Book." I had a calico quilt next to the frames when I found the débris in the hive. I found amongst it, when fresh from the hive, the larva of a moth or butterfly, the size of a fine thread about ⅛in. long. (2) In destroying bees in a roof, would it be possible to blow in with a small pair of bellows the smoke of a sulphur candle, or that of carbide of calcium into the entrance used by the bees? I once destroyed bees in a roof by the former means. Or would it be possible to suffocate them by plugging their entrance? I have used cyanide of potassium crystals for destroying wasps, placing them at the mouth of the nest, and found the effect very different on a sunny or dull day. On the former day the wasps died as they walked over the crystals, on the latter the effect was quite slow. I have never tried the cyanide in powder, but fancy its power might be much reduced in that form. I should be inclined to locate the bees in the case recorded (8835, page 417) by carefully listening *inside* the house, and by judicious boring make a hole sufficient to insert some destroying agent. If the bees have been there some time, the honey, when sold, would probably pay all expenses. I netted 35lbs. of honey from the bees I destroyed in the roof, where they had been a couple of years. Perhaps you may like to hear of my experience with bees this year. I started with two hives and had four swarms, one of which was lost. From the five hives I took over 200lbs. of honey. I have now three hives, so I united two pairs of stocks. The bees are still carrying pollen into each hive.—A. P. HOCKIN, Hayle, Cornwall.

REPLY.—(1) The grub was probably that of the small wax moth. (2) Much depends upon the position of the bees as to the procedure for killing. Your method would, no doubt, work, but we are afraid it would taint the honey.

Notices to Correspondents.

RADNORIAN.—*Storing Extracted Combs.*—(1) Store the combs in a dry, dust-proof place and they will be quite fit to use next spring. (2) As the shallow combs have been bred in you should melt them down. No. 1 sample of honey is from mixed sources and is very thin; worth 6d. per lb. No. 2 is from white clover, also thin in consistency; it is worth 7d. per lb.

L. W. (Glamorgan).—*Dead Bees on Top of Quilts.*—The bees have by some means got above the quilts and, being unable to find their way back, have died of starvation.

H. C. (Steventon).—*"Isle of Wight" Disease.*—We have never heard of "whiteness on the wings" being a symptom of "Isle of Wight" disease. Thank you for "cutting"; it is an interesting case and we will use it for "B.B.J." when we have space to spare.

C. J. M. P. (Rathley).—*Unsealed Stores.*—If the syrup you gave was fairly thick, it is possible that no harm will result. Keep the stock well supplied with candy.

H. S. (Andover).—*Making Comb Foundation.*—(1) We should not advise you to try making your own foundation. In the first place, it is an expensive and difficult process, and, in the second, it would be impossible for you to sterilise the wax without the proper appliances for doing so. (2) The process is described in "Wax-craft," by T. W. Cowan, 2s. 2½d., from this office. (3) You would require either a dipping tank, a mill, or a Rietsche press. (4 and 5) No doubt appliance manufacturers would quote you a price for one of these machines. Write to one of our advertisers.

Honey Samples.

J. C. (Bentham).—The honey is from mixed sources and worth about 8d. to 10d. per lb. retail.

E. E. B. (Bristol).—No. 1 sample is spoilt by honey dew; only fit for bee-food. No. 2 is from mixed sources, is of good grain, but not particularly good in colour; flavour very nice.

Q. E. D. (Timperley).—In our opinion the honey has either been "doctored" or is of foreign origin.

T. PROCTER.—The honey is a very good heather blend, and will certainly do for showing in that class.

P. P. (Stoke Rivers).—You will never be able to make the honey suitable to show even if you do re-strain. You will be lucky if you can get 5d. per lb. for it retail.

Suspected Disease.

T. G. (Leominster).—There is no brood whatever in the comb; it simply contains pollen and there is no trace of disease.

J. M. H. (Lanarkshire).—The bees were too decomposed for examination to ascertain cause of death.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

THE CONVERSAZIONE.

(*Continued from page* 453.)

Colonel Walker said that as one who had devoted a certain amount of attention to judging, he had been charmed with Mr. Pugh's lecture, and to such a great extent agreed with him that he had very few criticisms to pass. Mr. Pugh thought that sections built on drone foundation were the prettiest, but he (Colonel Walker) held quite an opposite opinion. It was a small matter, and a judge should not let his opinion with regard to such a point make any difference. He mentioned this to show how thoroughly we might agree and yet disagree in minor details. With regard to classes, he thought if every class of heather and clover were separate it would be rather confusing, and would cost a good deal of money if prizes were allotted to every class. He thought that there should be a separate class for sainfoin, and this must be desired by many others. He wished some appliance could be devised to ascertain quickly the density of honey. With regard to shallow frames, the comb ought to project beyond the edge to enable the cappings to be removed without any difficulty. As to disqualification, he thought the judge should disqualify according to his own discretion.

Mr. Bevan said that though he did a great deal of judging it was more in connection with flowers and fruit than with honey. The lecturer seemed to him to be following the right lines with regard to disqualification. He had frequently disqualified flowers and fruit for various reasons, and thought that it was a judge's place to disqualify exhibits unless there was a section of the committee told off beforehand, to go round and see that everything was in conformity with the regulations. He thought that the reasons for disqualification should be stated, and how the decision was arrived at.

Mr. Reid remarked that he had had the pleasure on several occasions of judging with Mr. Eales. Mr. Eales had remarkable capacity in the judging of honey, and he would like to express his gratitude for the lessons he had taught him. He had judged at many of the leading shows.

Mr. Eales said that Mr. Reid had referred to the small part he had taken, and it was with very great pleasure he had been one of his colleagues. The only point that he should like to mention was with regard to shallow frames. He was certainly in accordance with Colonel Walker, and had been pleased with and profited very much by the remarks made by Mr. Pugh in his paper. With regard to granulated honey, he agreed with Mr. Pugh that granulated honey represents more or less what the bee-keeper himself is capable of, and he considered that exhibits showing what Mr. Pugh describes as air should have a greater number of marks taken off. He certainly agreed with the speaker in all that he had said that a good judge should be.

Mr. Richards wished, as a member of the Council who had to assist in appointing judges, to point out the difficulty of getting good men. Who is to appoint a judge? What is the qualification of a judge? Those who had spoken so far had judged for some considerable time past. Many of our judges have a reputation which is beyond dispute, and they are received as good and honourable judges, which is a very great thing. One thing he wanted to point out was that they would not always have these judges available, and they ought to endeavour to train young men in this work. He had several times had the pleasure of being with Mr. W. Herrod when he was judging, and thought that such an opportunity should be given more frequently to the younger members of the Association. Though they might have passed examinations in bee-keeping that gave them no qualification as judges. The Association would require more judges, as its work was extending very much owing to its connection with the Board of Agriculture, and it had become necessary to have more trained young men to step into the breach as the older ones retire.

Mr. C. N. White remarked that it was long since he had attended a meeting of the B.B.K.A., as he had other things to do, but that when he saw his old friend Mr. Pugh was to lecture he made up his mind to do his best to be present. He considered that judging was a very difficult matter—as those who had heard the lecture would grant—to criticise at a moment's notice. Mr. Pugh had dealt with the subject so admirably that one could offer very little criticism, and most of those present would agree with the lecturer's remarks from beginning to end. With regard to sainfoin sections, he remembered several years ago he had some, and in order to assist in the success of their show he entered them; they took first prize and a silver medal. Next year sainfoin sections were entered again; they got nothing. He was of the opinion, already expressed that night, that sainfoin should not be in the same class as clover. He remembered judging at one of the shows with their dear old friend, the late Mr. W. Broughton-Carr, and on that occasion they put aside all but about three or four sets of jars simply because they were heather-blends. Those that came in for the prizes were derived from one

source only, and were extremely nice. He would have liked to have touched upon a few more points, but as he had to leave directly he would close by saying how much he had enjoyed being present, not only to hear Mr. Pugh, but in being amongst them again. He had noticed some old faces he remembered twenty-five years ago; others, he regretted to say, were absent, and a great number were strangers to him. He would like, if the Chairman would allow him, to propose a hearty vote of thanks to Mr. Pugh for the exceedingly interesting and instructive lecture that he had delivered to them.

Mr. Frankenstein said that, speaking as a very young judge, he must say how much he appreciated the practical manner in which Mr. Pugh had treated the subject. There was one point, however, upon which he ventured to offer an adverse opinion. In the matter of leniency he did not think that judges could or should be any more lenient than they were at present. If any of those present had seen the number of exhibits at the "Grocers' Exhibition" they would realise what a big task there is for the judge in a class of between sixty or eighty exhibits, and it takes over an hour to judge them. If the judges were to take into account the colour of the glass jars they would not get through in three hours. One more point he would like to mention was disqualification. Judges at present do not know whether they should do this or not, and a clear rule on that point would be advisable. It should be stated in the schedule. An excellent plan also would be if cards stating cause for disqualification were placed in front of any exhibit disqualified.

Mr. J. B. Lamb expressed the opinion that in the case of extracted honey more points should be given for aroma. Mr. Pugh had allocated 10 points for aroma as against 20 for consistency, whereas he preferred the scale of points for these two qualities suggested by Colonel Walker some years ago, namely, 15 for aroma and 15 for consistency. If he (the speaker) had to choose between a honey of good density but with no aroma, and a honey of poorer density but with a delicate aroma, he would choose the latter; in fact, many of the honeys from the colonies were of perfect density, but had no pleasing aroma. Several of our more experienced judges possessed keen olfactory powers. As some members present would recollect, one of the best in this respect was the late Mr. Weston; whilst the present Chairman of the Association, Mr. T. W. Cowan, who was also blessed with a keen sense of smelling, some years ago identified in this way an unusual sample of honey which had been brought to a meeting of the Council, but which had puzzled several members. The speaker emphasised the fact that the sense or faculty of smelling could be improved by exercise, just as it was possible to improve the memory, or the power of appreciating high-class music or literature. A practice that would be found useful for this purpose was to place half-a-dozen bottles of different honeys in a certain order, after making a mental note of each as a result of smelling it, then to endeavour with the eyes shut to identify each sample of honey by the aroma. It was necessary, however, not to leave the caps off the jars for any length of time. He felt sure that those who aspired to become first-class judges would find this practice invaluable for the purpose of exercising their sense of smelling.

Colonel Walker did not think that he gave 15 points to aroma, but he could not remember exactly. He thought more points should be given to density.

Mr. Pearman said that he would like to say a few words as an exhibitor. He had the greatest confidence in every judge that was sent out by the B.B.K.A., but, at the same time, judges were appointed by other bodies in whom he had no confidence. It had been truly said by the lecturer that when a person obtains his first-class certificate he considers himself qualified to judge anywhere. He did not agree with this. Mr. Pugh had said that at a certain show there were prizes given for the tasting of honey; he had no doubt that he was speaking of the same case as the lecturer, and he believed that out of the three prizes that were awarded at that show not one went to a first-class expert.

Mr. Herrod said he was certain Mr. Pugh had dealt with the subject in a very interesting manner, but he had picked out one or two points upon which he would like to say a few words. First, with regard to training judges. That is a thing urgently required at the present time. There were one or two in the room that he had tried to assist in this way, but he very often found that a judge was rather diffident, and objected to having a novice with him. Then, of course, arose the difficulty of jealousy on the part of exhibitors. Some of our best judges teach all those who are willing to make a study of judging honey. Another point was that a number of judges are afraid to give offence and are not firm enough. Judges should take a very firm stand, and if an exhibitor did not conform to the rules, then certainly he should be penalised. With regard to the lacing of sections, in recent years very little trouble had arisen through over-lacing. He did not care if the lacing was only one-sixteenth too much, the exhibit should be disqualified: rules are made to be obeyed; there was no

reason why the comb space should be 3⅜in. instead of exactly 3½in.; the limit being the minimum not the maximum comb space. He remembered a little while ago having to disqualify an exhibitor in three classes, who lost a silver cup in consequence. With regard to points, he was pleased to hear Mr. Pugh recommending judging by comparison, and maintained it was the only safe course to pursue. They would find in practice judging by points had been tried and failed, not only with honey, but with all agricultural produce. One other remark before he closed: a judge should never award prizes to sections unless he tasted them first, and not award a prize to those which *looked* the best, irrespective of flavour. There was no need to damage the section if the excellent glass taster designed by Mr. Reid was used.

Mr. Reid said that Mr. Herrod had referred to one point of very great importance, the training of judges. If they desired to have exhibits well and carefully judged they must take some trouble to train the judges. The Council of the B.B.K.A. might devise a plan to give advantages to a number who wished to qualify as judges by appointing them to assist experienced men. With regard to air spaces in granulated honey, it was a rather difficult matter to account for these. When the honey was thick and began to crystallise, there was a certain amount of shrinkage; it came away from the glass, and this caused the air space. In judging sections, he agreed with Mr. Herrod that every section should be tasted. They might be the proper weight and finish, but if the judge did not taste them he could not say which was worth a prize, and so tasting was absolutely necessary; as Mr. Pugh said honey is an article of food, and should be judged as such. As to aroma, a judge should have a keen sense of smell for honey, and as Mr. Lamb told us, he should be able to tell the source of the honey by the smell. He put the resolution which, had been proposed by Mr. White and seconded by Mr. Richards, that Mr. Pugh be thanked most heartily for the excellent paper he had given them.

Mr. Pugh, in reply, said with regard to Colonel Walker's remarks upon the extra classes, he had said it was advisable for sainfoin honey to have a separate class, not the white clover. As to disqualification, the judge has really so much to do that if this unpleasant task could be relegated to an elected committee it would be a very good thing. Mr. Eales spoke about shallow frames, and he (the speaker) quite agreed with what he said. Mr. Reid had expressed his (Mr. Pugh's) opinion, but in much nicer words, on the importance of training judges. Mr. White had spoken of heather blend, and he agreed with him that it was absolutely necessary that this be kept distinct from the dark honey class, and also from heather itself. Mr. Lamb contended that more marks should be given for aroma, but density was far more important to his mind. Mr. Lamb said Colonel Walker gave more points for aroma, but he (Mr. Pugh) did not think this was the case. Mr. Herrod had spoken of the necessity of preparing judges. If this were done, it would enable Mr. Herrod and the other secretaries to recommend judges who had been properly trained. He also spoke of the lacing of sections. He was strongly of the opinion that when there are rules laid down in the schedule they should be adhered to. Mr. Reid had mentioned the training of judges. He hoped that they would be able to do a little more in the way of training young judges in the near future as a result of that evening's proceedings. He thanked them very much for their attention and criticisms.

Mr. H. J. Menzies was then asked by the Chairman to give his address on the Marketing of Honey, which he did as follows:

Mr. Chairman, Ladies and Gentlemen,—I come before you to-night in the character of an adventurer into an unknown region, armed only with the conceit of ignorance and foolishly blind to the difficulties and dangers of my task. I had, indeed, hoped to have escaped the ordeal by the forgetfulness that often buries in kindly oblivion rash promises made in moments of undue excitement. Unhappily for me, you have a secretary who does not forget, and when the inevitable summons came I had to honour my acceptance as best I could.

Still, just as John Mill the elder claimed as a special qualification in writing a history of India that he had never been there, so I may flatter myself that, in addressing the Bee-keepers' Association, my want of knowledge of the practical side of bee-keeping will make my remarks all the more valuable. I am simply a business man going to talk to you for a short time on the business side of bee-keeping, that is, on the methods of marketing your crops.

Now, in reading the objects of your Association, as expressed on your official notepaper, one cannot but be struck by an omission which to a business man is somewhat extraordinary. You profess a many-sided interest in the production of honey, but as to its distribution you say absolutely nothing. Yet a common-sense view of the case would say the two are so inseparably associated that one cannot possibly be considered without the other. What is the good of the advancement of bee culture and the increase of the home

supply of honey if they are not accompanied by an increased consumption. Bee-keeping, I imagine, can only improve the condition of the cottagers of the United Kingdom if the products of bee-keeping can be profitably exchanged for hard cash or its equivalents, and the best and most advantageous ways of doing this are surely not beneath your consideration. If it is thought that your motto should be "Take care of production, and consumption will take care of itself," you never made a greater mistake, and the sooner you are disabused of that idea the better, for there is a very serious danger that you would only thwart your own intentions. Let us suppose, as the result of your efforts, the entire production of English honey could be doubled, you would no doubt be proud of your success, but do you for a moment think that without some special endeavour to promote its use the public would take it off your hands. On the contrary, stocks would accumulate, prices would fall, bee-keepers would have to do double work and at considerably higher expense to realise no more than they are doing to-day. It is told that a bachelor vicar one Sunday found amongst his congregation his Bishop just returned from the honeymoon after a second marriage. The text he used for his sermon would be equally applicable to our bee-keeper: "And the last state of that man was worse than the first."

It is therefore the distributive side of the question we are met to discuss to-night, because, as a distributor, I have some little knowledge and experience which may be useful to acquaint you with, and for us both there are problems the solution of which may be forwarded by a suggestive debate amongst practical men. Let me first, then, speak of what I know, the public demand for honey, especially in the great centres of consumption like London and large manufacturing towns, although I am not sure that a sharp line is to be drawn in what I am going to say between these and many provincial boroughs of a more rural type. In fact, my experience goes to show that it is six of one and half-a-dozen of the other, but I can speak with certainty of a place like London, and therefore specifically name it. A few years ago this demand was, to all intents and purposes, non-existent. The great mass of town dwellers knew the name partly because they had heard it read from the Bible, partly because in the course of their upbringing the example of the industrious bee had been associated with their earliest introduction to the muse of poetry. Unless, however, they had the good fortune to have friends in the country who "kept a bee," they never tasted honey, except as the vehicle of a lung tonic, and they never saw it offered for sale because the shopkeeper never dreamed there were purchasers for it, and never knew how to supply them if he did. The supply was of a most accidental and spasmodic character. For the aristocratic West End and the wealthier suburbs, a few sections for about two months of the year adorned the windows of the high-class dairies and best grocery stores, and then totally disappeared. In other places a businesslike parson desiring to make the best of both worlds would stroll in, and by the expenditure of much eloquence induce a reluctant buyer to place an order for "the finest honey in the country," but when that supply was sold no more was to be had. A dairyman here, or a grocer there, might have a connection with a producer in the country, or, as the formula often ran, "the friend of a customer," from whom erratic deliveries and the most variable of qualities occasionally stimulated an uncertain local demand. Ninety-nine per cent., however, of shopkeepers who were perfectly ready to sell honey did not know where to get it, and nine hundred and ninety-nine possible consumers out of a thousand had no opportunity of either cultivating a taste for it, or of knowing they possessed an inherited instinct for one of the most ancient and universal of foods.

(To be continued.)

REVIEWS OF FOREIGN BEE JOURNALS.

By "Nemo."

Pasteurisation of Honey. Tastes vary with respect to honey, some persons preferring it liquid, others granulated. To obtain it in this state, after extracting it is placed in vessels in which it is allowed to granulate, then, when it is required in a liquid form it has to be slowly melted by placing the vessel in hot water, and in due time the honey becomes as clear as when first extracted. M. M. Conquax points out in *Le Miel* that this method of converting granulated into liquid honey has serious objections, and for this reason many bee-keepers object to liquifying their honey, even if they are asked for it in this condition.

The principal objection to re-liquifying honey is that most of the aroma is dissipated in the melting. Although the flavour of the honey is retained, the particular aroma derived from the nectary of the flower from which it was obtained disappears entirely, and for the epicure this is a depreciation which must be taken into account. In any case this re-liquifying should only be done once, but often after a short time the honey commences to granulate again, and soon becomes

solid. For this reason it has to be melted several times, and then all the aroma vanishes. It must also be noted that all these manipulations have a deleterious effect on the future preservation of the honey.

To prevent the granulation of honey, and to enable it to be kept for an indefinite time in a liquid state, M. Ch. Pierre, of Epernay, conceived the idea of its "pasteurisation." Instead of waiting for the honey to crystallise, he puts it in glass jars, within eight days of its extraction. The jars are placed in a large receptacle of boiling water, where they are allowed to remain for fifteen minutes at a temperature of 194 degrees Fahr., and are thus sterilised before the jars are capped. This method not only prevents granulation of the honey, but also conserves its aroma without deterioration for many years. It is evident that in seasons when there is a glut of honey this system is of value, as it enables the bee-keeper to keep his produce without any fear of its deteriorating in the slightest degree. Not only does M. Pierre preserve his honey for an indefinite period in this manner, but he also adopts the same plan for preparing a honey-syrup in which to preserve fruit, especially raspberries, which remain whole and appear as though they had only just been gathered. Other fruits are equally well preserved in this way, care being taken to sterilise them in the same manner.

Bees in Java.—The naturalist, K. V. Scherzer, in the *Elsass-Lothringisher Bienenzeitung*, says that the Javanese are very fond of birds, and hang cages containing them under the eaves of their houses. Besides these they have peculiarly constructed bee-hives made from bamboos 6in. to 9in. in diameter, and 3ft. to 4ft. long. Such a bamboo is split in the middle, hollowed out by removing the divisions, and is then bound round on the outside to keep the parts together. A small opening is left at one end, through which the stingless bees (*Melipona minuta*) enter, take possession of the hive, and fill it with honey and wax. In their wild state these bees are found in holes and crevices of limestone rocks. The wax is dark, soft and sticky, and is used in the preparation of the handsome coloured designs on the native women's dresses.

AMONG THE BEES.

By D. M. Macdonald, Banff.

SOME NEW APPLIANCES.

A Screen Escape.—This is very similar to the ordinary well-known appliance: indeed, it is fitted with one or two regular Porter escapes, but the material, apart from the framework of wood, is galvanised screen-wire cloth. It is argued that the solid division makes too complete a separation between the super and the hive below, and that the partial severance of the two bodies is an improvement. The inventor claims that the bees clear out quicker, and in favour of his use of two escapes he points out that if one fails to act, as on occasions it may, the other is there as an outlet for the workers. This obviates any chance of the bees suffocating in very hot weather if the passage gets obstructed from any cause. Then, he maintains, with the use of a board the honey above gets cooled down to such an extent that it adds to the labour of extracting, whereas the free ventilation allowed by the screen keeps the honey in nice condition to extract very readily. Mr. Hodgson, the inventor, deals with the only likely danger—that honey may be carried down through the screen—by giving us an assurance that this does not take place in practice. The peculiar adaptation of the screen occurred to him while using a screen-frame in connection with cell-getting, and he asserts, in favour of his invention, that its use "saves him much backache brushing individual combs, with the consequent killing and injuring of hundreds of the season's workers—to say nothing of the return in stings—and the danger of robbing is reduced to a minimum."

A Frame Pliers.—The inventor of this hive tool seems to be our old friend Mr. Joseph Gray, now in California, and he maintains that its use "saves 25 per cent. of stings and it does 25 per cent. more work." The frame is grasped firmly with the pliers with one hand and held in any position, thus leaving the other hand free to use the smoker, to brush off the bees, or carry out any other manipulation. The pry forces the nut and bolt to fasten the two jaws together, thus giving a firm grip. The reverse nut end can be used as a hammer and the handle acts as a scraper. *Gleanings* alongside of this illustrates another hive pliers perfectly similar to the frame-lifter sent out in 1911 by Mr. Marshall, of Lincoln, shown and described in the "B.B.J." of that year on page 348. This is a very handy tool and fully carries out the inventor's plea that it securely grips the frame, leaving the other hand free to act. There is another small pliers on the market easily carried in the vest pocket and so always available, but it causes considerable strain on the muscles if long in use. I call attention to these tools because in these trying times of disease the less the expert actually handles frames the better. When necessity compels him to do so, the smaller the surface brought in contact

with possible germs or spores the less danger arises of carrying contamination to a new quarter. If he uses his pliers in handling a frame, the part in touch is so small that it can easily be disinfected before returning to his bag or pocket.

Wire Fences.—Over twenty years ago I experimented a good deal with wire fences for use in section racks, instead of the metal or wooden dividers, and the late Mr. Howard, with whom I corresponded on the subject, was keen on getting something workable. The trouble of brace-combs and connections between the honey and the wires, however, caused so much mess and loss that we dropped them. About two years ago an American, Mr. Vernon Burt, tested the Betsinger hive-fence exhaustively, but his bees built the combs against the wires and all through it, so that the honey was spoiled. This year, however, he reports that he has some of the most fancy sections he has ever produced in supers divided by these fences. Other Americans report somewhat similar results. I believe our Mr. A. H. Wilkes turns out wire dividers constructed on the same principle as his queen excluders, but I have not observed what success has attended their use. Perhaps some who have tried them will report results? The bees I formerly experimented with were blacks, and I know hybrids were also tried, but results were the same. The same bees did not show any proclivity to throw out braces to ordinary separators, but they did with the wires to a marked degree. Certain strains—in my experience, the so-called all-goldens are very fond of building brace and burr combs in quite unexpected quarters. Queens in these cases were pinched and the progress of the vice was stayed. The improvement noted above may be the result of a better strain.

A Good Idea?—When dividing in early summer there is generally some trouble in getting bees to stay where put. If the two hives are placed side by side at about equal distances from the old site, to right and left, one or the other is almost certain to secure an undue proportion of the flying bees, however carefully we may divide them. Theoretically both should share alike, but practically this is found to be far from actual fact. The idea I picked up recently was as follows:—A board, the height of the hive front and about double its breadth, was fitted up in front with *two* small entrances, one near each side of flight-board. A heavy dark line down the centre of this board gave the impression that it was cut in two. The bees were supposed to use both entrances in leaving and entering the hive, and it was promised that they would get into the habit of so using them. When this habit had become a confirmed one, a second hive was placed close to the first and the division was made by placing an equal number of frames in each, and filling up, I presume, with frames fitted with full sheets of foundation. The board with the two entrances was now fitted to the front of *both* hives, with an entrance lying about the centre of the flight-board of each. When bees had acquired the habit of using these openings the board was withdrawn, and bees were allowed the full breadth entrance into both hives. Theoretically this plan should work admirably, but as I have not experimented I have added an interrogative note to my heading.

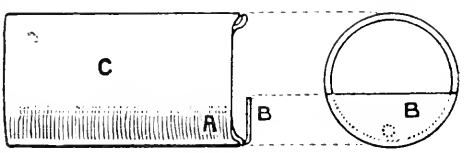
Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

DESTROYING BEES.—FEEDERS.

[8883] Possibly, in light of recent correspondence, the following items may be of interest to "B.B.J." readers.

(1) *To destroy stocks*, solid cyanide of potassium can be used. A piece half the size of a walnut may be pushed through the entrance to the centre of the floor-board, or put in a tiny saucer on the frames under the quilts, and all entrances muffled with a wet cloth. The bees are

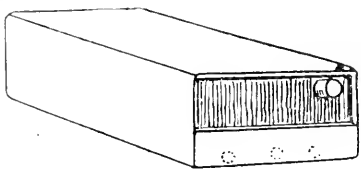


all dead in an hour, and any honey in the store combs can be extracted and used without danger.

(2) *Slow Feeders.*—A recent issue of the *American Bee Journal* describes one which answers well with me.

(C) is an ordinary lever-lid tin, with a hole ⅛in. diameter at (A), and a piece of tin (B) soldered on across the lid to make a light little feeding trough. The charged tin is laid on its side, with (A) at its lowest point, under the quilts. The syrup oozes into the trough as fast as the bees remove it down to the hole-level.

I have made some long, narrow feeders of old pound carbide tins, which require very little space when in use; and some large ones with three holes, from square cans with a spout. All are lined with



paraffin wax, when clean and dry, before use. A sound cork is used to block the spout-hole when the square tin is placed on its side.—H. Wigley.

ARE HONEY BUYERS DISHONEST?

(8884) I wish to record my appreciation and thanks for your most courteous help in introducing a buyer for 4 cwt. of my light honey. This, surely, is real co-operation, and clearly shows that the Editors of the "B.B.J." are bee-men first and advertisers afterwards.

I trust that Mr. Menzies's lecture on marketing honey will be published. This is the positive and helpful side of bee-keeping.

On the negative side I have been struck with an amazing article, entitled "Incautious Marketing," in this month's *Irish Bee-keepers' Gazette*. The implication seems to be that the honey buyer or dealer who does not happen to advertise in that journal is a dishonest person familiarly acquainted with bailiffs and "gone, left no address" methods.

It is difficult to imagine more depressing and melancholy reading for those unfortunate bee-keepers in the County Cork and other districts where there is a glut of honey, who are longing to find a market for their produce. Encompassed on every side by pitfalls, and forced to believe that only by something approaching a miracle happening are they likely to find an honest honey buyer.

Intending buyers of Irish honey who had the effrontery to ask the Editor's help to get in touch with honey sellers are now described as "childlike folk" and "artists who may be quite honourable for all that we know," and, again, as "hurried or sixpence saving strangers," and, amazing to relate, the Editor says: "To act upon these politely-worded requests would be to open the back stairs to all sorts and conditions of men, and to prove ourselves greater asses than we think Providence intended us to be."

Humility could not go further, and the advice is most excellent, so in future those would-be buyers of Irish honey, who fondly imagined they were most properly approaching the front door of Irish beedom in writing to the Editor of the "I.B.G.," are now informed on the very best authority that such a proceeding is a back-stair method. As to the intentions of Providence, the statement is an *ex parte* one, which it is not necessary to discuss here.

As an Anglo-Irish bee-keeper of some years' standing, I resent most emphatically the imputation that the majority of honey buyers are sharpers and rogues, and further deny most positively that the average Irishman is so unblushingly innocent as to the most elementary ideas of business, and, further, that the Editor of the "I.B.G." assumes a great deal in taking it for granted that the mere fact of his handing an enquiry for honey to a seller would be tantamount to a bank reference. There appears to be no basis for this wholly imaginary suspension of business principles—the average Irishman has the reputation, both at home and abroad, of being able to look after his own interests very efficiently.

It seems astonishing that the editor of any bee journal, however unimportant, should so deliberately go out of his way to gratuitously insult honey buyers as a class, and practically in the same breath discuss the formation of an Exchange and Mart scheme. I have yet to meet the Long Firm "with full sounding title and impressive note-heading, long established, and with many branches," an iron pay-box for chief offices; or "the gentleman who was anxious to help the industry by assisting bee-keepers in backward places."

In my opinion, a more deliberately conceived campaign to destroy the fragmentary skeleton of the honey market at present existing in Ireland could not have been inaugurated, and if the effort of civility is too great a strain for the Editor of the "I.B.G.," I feel convinced, on good authority, that the Irish Bee-keepers' Association Marketing and Control Committee is quite capable of attending to any honey enquiries in a courteous and businesslike way. If he entrusts that business to them, he need not fear that his motives will be misunderstood, and the smartness and sanity which we are glad to hear he now proposes to exercise might profitably be employed in endeavouring to widen, instead of destroying the market.

Finally, I venture to suggest that there are many capable experts in Ireland who are quite qualified to act as correspondents. How much more interesting and useful it would be to read a monthly report from each of the provinces, Ulster, Munster, Connaught, and Leinster, instead of news from Stafford, Cheshire,

and Warwick. I have no fault to find with these English correspondents, except that so far as Irish bee-keeping is concerned they are completely out of the picture, and the result is a dearth of Irish news, unwholesome for the industry. There is much virgin soil and talent in Ireland apparently undiscovered, or, at least, unexploited by the "I.B.G." ANGLO-IRISHMAN.

A REPORT FROM CO. DURHAM.

[8885] I have pleasure in sending a short report upon last season's successes and losses in this district. Durham is not the best county "by far" for honey production, although we can produce some fine honey, given a favourable season. I commenced the spring with two hives, and on May 29th I got my first swarm at eight o'clock in the morning. It was a very warm morning, and having to go to work at 2 p.m., I got the swarm into a skep, and as soon as they were quietly settled began hiving them in a spare body-box on eight combs, with the intention of putting the swarm above the stock with excluder between, to make an extra strong colony and getting a big honey take. Suddenly my other hive swarmed right over where I was busy hiving the first, and, oh! the irony of it, the queen of the last dropped among the first swarm, although I did not know at the time, or else things would have had a different ending. Anyway, at 12 noon, out came the first swarm again and clustered on a whin bush, where it remained till I went to work at 2 p.m., and I have never seen those bees since.

Now, about the honey season. From two hives I secured over eighty sections, which were retailed at 1s. each (and in addition had the two swarms mentioned previously) this from the clover. I did not send my bees to the moors this year – the first time I have missed for thirteen years, and the best.

It was a pity your correspondent from Ashington (page 435) did not get to see the honey at Newcastle Flower Show. It was a treat. I was there on the opening and the closing days, and thoroughly enjoyed myself meeting old and new bee-keepers: also making new friends from other counties. I wonder if the bee-keepers of Wooler have a special glazing machine for glazing their sections. They were beautifully done. I shall have to have a lesson from Mr. Robson on the subject. I should very much like to hear Captain Sitwell lecture if he is to be at any place near the lower Tyne border. The exhibits staged by him at Newcastle showed that he had an extra dose of bee fever. In particular, I mean the six-frame observatory hive, which must have been a troublesome thing to get from Wooler to Newcastle. I think the "Isle of Wight" disease has about left this part: this district was cleared out by it two years ago. With good wishes. H. HARMER, Gateshead.

QUININE REMEDY FOR "I.O.W." DISEASE.

[8886] I should like to explain, in reply to Mr. W. Munro, whose letter appeared in "B.B.J." of October 30th, that in the first place there was an error in the letter he refers to: instead of China 7, as printed, it should read China ϕ (sign of Mother Tincture)—is it not? In a *Materia Medica* I have it reads: "Solutions are made from the sulphate of the alkaloid *Quina*." As I had this preparation by me, and no superfluous coppers to spend at the chemist's, I used it thinking that with a delicate insect like the bee I should be erring on the right side by treating it "homeopathically." The remedy certainly seemed to do a lot of good, but, as I have told you, the stock was cleaned out by wasps, as was also my healthy stock, leaving me beeless.

I am only a working man with a large family, so I feel the loss, but hope next summer to be able to purchase a swarm from a district where disease has not yet appeared. As an interesting and profitable hobby, bees are too good to drop at the first reverse. My eldest boy, aged eleven, had obtained his bee badge in the Scouts just before we lost our bees (the only bee badge earned in the district). He was examined by a bee-keeper at the request of his Scout-master just after he had taken off his honey, and was required to handle frames from several hives, so you will surmise he had no mean test for a small boy, who, as the examiner laughingly told me, "wasn't big enough to hold the skep up" in the hiving demonstration, "but knew the principle." We both look forward to getting more bees, and hope we shall not require homeopathic syrup or any other cure for disease in the better days coming.—P. ELCOCK, Fareham.

BEE-TENT LECTURERS.

[8887] A correspondent, signing himself "S. J.," attempts on page 447 to criticise my letter on "Efficiency and Veracity in the Bee-tent." Surely he has let his anxiety to correct overrun his discretion or knowledge! I do not claim infallibility, but desire to have as few flaws as possible where the interest of bee-keeping is concerned, especially with the publicity with which a bee-tent demonstration is endowed. I would ask him

which is the choicer English my "holding forth" or his "hark back"? Finally, if I had been criticising phrases, I should not have written the actual sentence of criticism "the necessity *of* putting the word," etc., but "the necessity *for* putting the word," etc. -BELIEVER IN EFFICIENCY.

CLEANING COMBS IN THE OPEN AIR.

[8888] A. H. Bowen, Cheltenham, writing of the fondness of rats and mice for honey-combs ("B.B.J." Oct. 9: p. 404, in "Tip for Bee-keepers") says:—"I recently put out a stack of shallow supers near a small stream for the bees to clean out," etc. Is your correspondent serious in giving this as a "tip" for bee-keepers? Surely a mistake somewhere! Very unlike his other valuable "tips." The tip I think most people would give would be on *no* account put supers or anything containing a speck of honey out of doors for the bees to get to unless you especially wanted to start "robbing." I and others near here have suffered severely through a skeppist neighbour putting his skep out to be cleaned up. It *was*, and some of our hives with it!—A. Ross, Essex.

Queries and Replies.

[8841] *Drones in October.*—I notice in "B.B.J." of October 30th, under Notices to Correspondents, that two of the writers refer to drones in October, and that you suggest that they were mistaken, or else that their presence is an indication of queenlessness or a virgin queen. I hope you will excuse me for disagreeing with your verdict, but I have kept bees for some few years, and noticed a drone turned out of one of my hives about the middle of October. This hive is headed by a 1913 queen, mated about the middle of July, and brood was seen about the middle of August. Since then, breeding has gone on rapidly, and the hive is now a strong stock with ten frames covered with bees. I quite agree that it is most unusual to see drones so late in the year, but we all know that bees have no fixed law like that of the Medes and Persians, and I am personally of opinion that the mildness of the autumn has induced the queens to lay very freely, and that they have not only laid worker, but drone eggs also. The hive to which I have referred turned out two or three drones in the nymph state as well. I must take this opportunity of telling you how much I appreciate both the JOURNAL and the *Record*.—J. WATERS.

REPLY. You are quite right, there are times when drones will be left with a laying queen right through the winter. We have ourselves a stock at the present time with a large number of drones, although there is a fertile queen present. These drones were reared early in the year, and none have been reared since July. It is, however, the exception, and not the rule, for this to happen, and, as we have stated, it is usually a sign of queenlessness or a virgin queen.

[8842] *Transferring Bees.* I would be much obliged if you would give me some advice. I had for two months a swarm of bees in a waste-paper basket. These I tried to put into a new "Dadant" hive, following the directions given in the "Guide Book" and putting the basket over the brood chamber of the hive. This I did last July. The bees are still in the basket, which they have filled with honey, and have made themselves an entrance, so do not use the hive at all. They worked through it at first, but now do not. I was obliged to leave during August and September, so could not see to them. The hive is fitted with frames and wax, but the floor-board is fixed. The hive seems to be too big, and there is no means of making it smaller. (1) How can I get the bees into the hive? (2) I also have a swarm in a skep. Can I transfer them to a hive now? (3) I have to move the bees to another garden about 300 yards distant. Am I likely to lose my bees?—F. T., St. Jean de Luz, France.

REPLY.—(1) You should pack round the basket so that the bees must go through the frame-hive; when strong enough they will work down. (2) Let the bees remain in the skep until next spring and then work them down in the same way. (3) If you move the bees during winter, after they have been confined to the hive for some days, you will not lose them.

[8843] *Re-queening and Increase.*—You have helped me so often in the past that I am emboldened to seek your assistance again. I have one hive with a 1912 queen. I intend buying another swarm in May next, which will have a 1913 queen, and I am anxious to start the following winter with three colonies each having a 1914 queen. In doing this I do not want to sacrifice the chance of surplus honey next season. I propose proceeding as follows:—(1) Build up the present stock as strong as possible by the middle of May, 1914. (2) At that date take out one frame of bees and brood, the old queen, and bees shaken from two other frames, and place these on the old stand to make with flying and returning bees a fair swarm. (3) If there are two queen cells in the hive at the time, split up the remaining frames into three nuclei, two with two frames and one with the remainder—say, five frames—and con-

fine all for forty-eight hours. If there are not enough queen cells, wait until there are. (4) As soon as a queen in one of the nucleus hives is laying, unite with the old stock, killing the 1912 queen, if possible, in time for the lime harvest. (5) Build up the large nucleus into a third colony. (6) Keep the other small nucleus going and unite in the fall with the swarm purchased in May, killing the 1913 queen. Ought I by this means to get a return from the artificial swarm, and is the procedure right? I shall be very grateful if you can enlighten me through the columns of your journal once again.—J. P. S., Ewell.

Reply.—If the weather is favourable your suggested plan should succeed.

[3884] *Queen-mating in October.*—I notice in "B.B.J." of October 30th two correspondents refer to "Drones in October." I have just had an experience bearing on this question. I have a skep which threw off two strong swarms, and one weak one. The latter, after being hived, was returned to the parent skep. This was on August 14th. A subsequent examination showed that the skep was strong in bees and stores, but towards the middle of October I observed a number of drones flying, and on October 24th I picked up the enclosed drone on flight-board of skep. He was then barely alive, and, I think, shows signs of having recently mated with a queen. Is this not so? The skep is still strong, but, of course, I cannot ascertain the condition of the queen. Can you tell me what has happened, as it seems strange that the queen should not have mated between August 14th and October 24th? I am pleased to say that my bees have done very well on white clover, notwithstanding the exceptionally dry season.—Harry Bridson, Cronkbourne.

Reply.—The drone has evidently mated a queen. It is difficult for us to say exactly what has happened without personal experience of the stock.

AN INTERESTING EVENING WITH THE BEES.

On Thursday, the 13th inst., at St. John's Hall, Wembley, Middlesex, Mr. J. C. Bee Mason showed the whole of his bee pictures. In addition to his well-known films of bee life and honey production, the following new set of films were shown: Bee-keeping in Holland, Cambridge Mammoth Show, 1912, the scenes including the prize trophy of honey, erecting the bee tent, the large crowd round the tent watching Mr. W. Herrod giving a demonstration with bees. A comic picture entitled, "How Bletsoe Castle was stormed," caused much mirth. Mr. Mason was seen removing a vicious lot of bees from the roof of the castle. After he had twice retreated from their terrible onslaught he rigged up a dummy to represent himself, which he fixed to the roof. After the bees had become accustomed to its presence, he removed the dummy, and, donning his familiar white hat and coat, had no trouble in driving the bees from their stronghold.

Other new pictures included driving bees from a skep and securing a large swarm and casts from difficult positions. It took nearly two hours to show the whole series of pictures.

Notices to Correspondents.

E. P. (Devon). *Cleaning and Bleaching Beeswax.*—The process of doing this is fully described in "Wax-craft," by T. W. Cowan, and in "Producing, Preparing, etc., Bee Produce," by W. Herrod, both of which books can be had from this office 2s 2½d. each post free.

In Perplexity.—*"Isle of Wight" Disease.*—(1) Yes, you did wisely in destroying the stock. (2) It will be best to destroy the combs. (3) Keep careful observation, and if it gets worse, destroy this also. (4) No cure has yet been found, but these remedies act as preventives.

J. D. (Swanwick).—*Using Claustral Hives.*—The Claustral chamber should not be closed except under special conditions, such as when robbing is going on or if there is snow on the ground, when the closing will prevent the bees being attracted outside by the reflected light. Bees require periodical cleansing flights, how often depends very much upon the weather, but more frequently in mild than in cold weather.

Interested (Lutterworth).—*Disinfecting Extracted Combs.*—If the combs were removed before the stock became affected, they can be used. We should recommend you to disinfect them with formaldehyde instead of Izal, as you suggest; the latter preparation might taint the honey next season.

Troubled (Warminster).—*Earwigs.*—*Coarse Granulated Honey.*—(1) Powdered naphthaline will keep the earwigs away. (2) Re-liquifying will not make the honey granulate with a smoother grain rather the reverse. Sell it in the liquid form.

Honey Samples.

F. L. P. (Leeds).—The sample is a very poor honey, and we should say it is of foreign origin.

Suspected Disease.

R. D. (Tipton) and H. J. S. (Buckhurst Hill).—Bees have "Isle of Wight" disease.

Editorial, Notices, &c.

BRITISH BEE KEEPERS' ASSOCIATION.

THE CONVERSAZIONE.

(*Continued from page* 464.)

(*Mr. H. J. Menzies on Marketing Honey.*)

The great discovery of modern business is that successful distribution requires a constant and uniform supply easily obtained and economically laid down at the centre of distribution. Given these elements, and the condition that a public appetite exists, and there is no limit to the possible increase of consumption that may be created by a careful study of popular taste. This has proved so in the case of honey. The importation of colonial honey, such as New Zealand, and still more markedly Jamaican, afforded an opportunity such as had not been previously presented for attracting public attention. To the distributor there was offered an adequate supply on the spot of the necessary level of quality, which he could obtain at a definite market price with little or no trouble. He was therefore able, at a minimum of expense, to put on the market in a form his experience and knowledge had taught him would prove attractive an article the public knew little actually about, but which they had sufficient curiosity to try. The result was startling. The retailer found he could rely on a regular supply at all times in quantities he could easily handle, the consumer saw placed prominently before him a luxury which the more he bought the more he wanted to buy. The demand grew by leaps and bounds; there is to-day no neighbourhood in London so poor that honey cannot be sold there, and in the course of a few years a trade has been developed which bears to its beginning a proportion like that of the spreading mustard tree of Scripture to its proverbially diminutive seed.

Now let no one here delude themselves that this trade has been obtained by false pretences, or that the public have been led to suppose they are buying one variety of honey when they are receiving another. The honey has been honestly sold as Jamaican, there has been not the slightest attempt at passing it off as English, except possibly by a few unscrupulous persons like those to be found in every business (including even, I regret to say, British bee-keepers), and the consumer shows his appreciation of the quality by returning for the goods over and over again. I do not say for one moment that the average quality of Jamaican honey approaches the average quality of English honey, although the best Jamaican is better than some English, but you may take it from me the public are, for the present, well content with what they are getting.

Here I come to the question that will at once appeal to you, why cannot as much be done with English honey as with the Colonial? Standing before a body so closely connected and deeply interested in the industry as you are, I say with all possible conviction I know of no reason why such should not be the case, if only similar conditions prevail. I believe there are no visible bounds to an increased consumption of English honey, provided it is handled on modern methods of business. Honey is still regarded in the light of a luxury rather than a regular beneficial food; there are thousands of well-to-do households on whose tables it never appears from one year's end to the other, and the proportion of non-consumers to consumers remains enormously great. There is a wide field for the cultivation of its daily use, and it should not be difficult with adequate organisation in marketing to give an impetus to honey production far in excess of anything you have imagined in the most optimistic moods of your society.

But how is this to be done? Simply, I say, by bringing about the same conditions for English honey that have proved so beneficial in the case of Colonial. Let me recall what those are. There must be a supply readily accessible to the hands of the distributive agency, it must be sufficient in quantity to last right through the year, and so uniform in quality that the consumer is never conscious of any change of flavour. It must be brought at a minimum cost to the consuming centres, and the trouble of handling it reduced to its lowest point. There must be, in fact, a division of specialised labour between producer and distributor, and the less time and energy the latter has to devote to details of supply the more he can concern himself with the labours of distribution.

Our discussion, therefore, turns first on the subject of supply, and secondly on that of distribution. Let us deal with them in their order.

It would be folly of me to waste your time in considering under what circumstances honey is produced in this country, for there is not a person in this room who does not know them far better than I do. I am quite content to emphasise the point that the greater part of it comes from bee-keepers in a very small way, scattered throughout the length and breadth of the land—along highways—if motor traffic permits—and by-ways, by moor and common, in remote villages and isolated hamlets, with an output varying from 100lbs. to 300lbs. apiece. You, yourselves, at any rate, avow as one of the objects of your existence the encouragement and pro-

motion of this class of producer, and they form, after all, the crux of our problem. The large producers we need not trouble about. They are generally men of enterprise, putting capital and brains into their business, and fulfilling in a measure the conditions which we have laid down as essential to promote business. The small man is quite otherwise. Every herring hangs by its own tail in profitless independence. Each must bargain for himself as best he can under difficulties of market, of transport, and of package, seeking with his untrained wit to push his wares very much as his ancestor of a hundred years ago did before him. What else can he do? What organisation offers to come to his assistance?

On the other side, what use is a supply of dribs and drabs to a distributor in a place like London? He first has to communicate with a large circle of correspondents who are not, and cannot be expected to be, business people, who, in return to his request for a quotation, will reply: "What will you give?" or else name the retail price they have heard of in some neighbouring watering-place. When, after going through many samples, he makes a final selection, he finds he has to take twenty or thirty lots to make up a quantity of a few tons, all different in flavour and colour, out of which he courageously hopes a satisfactory blend will emerge. After endeavouring to placate the wrath of those whose honey his perverted taste has failed to distinguish, he next has to rail empty casks to all parts of the country, and finally receives the consignments, half of them anything but recognisable from the samples on which they were bought, and half of them weights for which some other designation than avoirdupois is necessary. He has further to pay extreme cost of carriage, because each lot falls below the minimum rate, and he has to block up his storeroom with a host of half-filled packages. Let me interpose here a couple of personal experiences to illustrate other aspects of the existing system. I once consented in a moment of good-natured weakness to accept a consignment of honey in a vessel I was assured was eminently satisfactory. When it arrived, I found it was fashioned in its relation of breadth to height on the proportions of the Monument. The consigner had very thoughtfully, to save my pocket, sent it carriage forward at owner's risk. The Railway Company, equally thoughtful, had in view of its narrow base laid it down on its side in transit. The result was that half a hundredweight of lovely honey lingered somewhere on the line, and I had to use my utmost powers of diplomacy to extract half the price of it from the unsympathetic carriers. I am bound to say a milk-churn, on another occasion, was a more successful vehicle of transmission.

The other instance was a consignment of sections. The sender's conception of their strength was apparently derived from the famous advertisement of Veritas gas mantles. In a box six feet by two feet by two feet he placed thirty-six dozen sections without straw or other packing. The country railway porter had evidently, as the most convenient mode of progression, up-ended it, let it fall flat, up-ended it again for it to descend on the other face. This method has its virtues, but not where sections are concerned. Nine dozen and four bore evidence they once were sections, the rest were a pulp of wax and honey.

Now what system could be less helpful or more discouraging to the distributor than this, or so unlike that which we have seen to be successful in another direction? It belongs to an old-world order of things that is fast disappearing from sight, and lingers only here and there to-day where enterprise is wanting to a languishing industry. How is it to be remedied? The answer is with you. I can only suggest what seems to me the way, although, as I have already said, there may be difficulties of which I am foolishly ignorant. You want a strong central national committee to do the organising work, and take control of future operations. It should design utensils, standardise packages, determine grades and fix prices. Then, making use of your local associations, you should gather the entire crop of honey so far as you can control it—and success would soon make your control complete—passing it through the County Association to the depôts of the central body in the great centres of distribution. If you say all this is pretty on paper, but impossible in practice, I answer such a scheme is already at work in some of our Colonies. We want you, then, to be in this position—the position already occupied by your Colonial brothers—so that we can obtain a sufficient supply in one transaction instead of fifty; can select definite grades, instead of a wide assortment of colours and flavours; and above all endure a minimum burden of rates and charges.

I must, in all humility, admit myself to be what has been unfeelingly termed that parasite of industry, the middleman. You know the reputation of the creature, grinding down the unfortunate bee-keeper on one hand until the game is not worth the candle, and on the other hand callously killing the trade by his extortionate charges. Yet he has some extenuating circumstances to plead for his existence, and this brings me to my final point—the question of distribution.

Now, of course, the ideal system is to bring the producer and consumer in direct contact with each other, so that the obnoxious middleman is entirely eliminated, and no intermediate profits disfigure the transaction. The *Daily Mail*, in one of those characteristic outbursts with which it endeavours for a week or two to rectify the errors of an evil generation, some two years ago propounded a scheme of this kind by which the hungering mouth in the city should be fed straight from the hive at a price as attractive to the consumer as it was remunerative to the bee-keeper. Unfortunately, it forgot the leagues of distance that separated the two parties to the bargain, and that owners of conveyance had an invincible repugnance to do things for nothing, but, on the contrary, levied heavy tolls for their service. It also forgot, or, if one may dare suggest a spot on its infallibility, it did not know, that the consumer takes his pleasures slowly, buying a single pot at a time, whereas the desire of the producer is to clear his stock as speedily as possible. So when the eager purchaser remitted his 6d. or 7d.—not to mention postage—for a pound pot of the real genuine article without dispute, he was sadly surprised to find himself charged 4d. more for carriage, and the expectant vendor opened his batch of letters to find a total sale of 3lbs. or 4lbs., which he had to pack into as many separate parcels, the conviction gradually grew on both sides that there was some flaw in the *Daily Mail's* scheme of things that made it no better than that it proposed to supersede. In short, the bringing together of the two essential parties by direct intercourse was proved as impracticable as it was expensive. The first step, then, of our argument is that under existing circumstances some middleman is a necessary evil.

Having thus disposed of the question of direct supply to the consumer, the next point is: Can the producer supply direct to the retailer? Here again the difficulty of inter-communication, and the high relative cost of distribution, makes the proposition economically unsound. How are the two parties to be brought into touch with each other, or, being brought, how can trade be effected on terms mutually advantageous? The producer, as we have said, wishes to materialise his harvest with all celerity, and close his year's accounts without further delay. The retailer, on the other hand, is a small capitalist, who has to spread his money over many articles, and he cannot afford to hold a stock likely to stand on his shelves for many months. It is no answer to say that here and there, or even in scores of cases, these operations are successfully conducted; they are altogether exceptional instances, and form a miserably low percentage of the total possible. Besides, there is no stimulus to trade in such operations, because once the transaction of buying is over the buyer's mind is not directed to the subject for another year. It is totally different when the traveller of a wholesale firm is making his regular monthly call. He can push the goods every time; he can sell sufficient to last until his next visit; the shopkeeper, finding his shelves clear, is pleased to order more, and he receives nice fresh-looking packages that half sell themselves to put before his customers. There is thus a constant renewal of interest, perhaps even some little enthusiasm aroused that goes far to create a steadily increasing trade. What incitement to business is found in bottles of nine months' standing, with dirty fly-blown labels, and the honey in every stage of crystallisation.

If the individual producer cannot deal successfully with the retailer, can the County Association do any better? It is perhaps a step in the right direction, because any form of co-operation is better than none, but the difficulties remain practically the same. Unless the Association is prepared to hold stock for use as required, to canvass for trade, and to bear the ordinary expenses of commerce, it meets none of the difficulties already mentioned. If, on the other hand, it attempts these things, it must make a profit to cover such charges, and then it will find the honey trade by itself will not bear it. I believe there are one or two associations trying to find trade in this way, but their quotations do not suggest themselves as the fruit of mature wisdom. When, for instance, they quote 1lb. jars of finest pure English honey—screw-capped—at 6s. 10½d. per dozen, it seems to my benighted intellect they have left out of their calculations every cost but honey and glass. It did not surprise me to hear they were not flourishing.

Our final point is: Can the distribution be effected by such a great central committee as I have spoken of? and to this I say: "Probably yes, in time, but not for many years yet." The annual value of honey does not run like that of butter and milk into millions of pounds, and on its present total turnover even moderate expenses would form a heavy tax. You must therefore wait until future developments so materially add to the country's production that you can undertake the work at an exceedingly low percentage of cost.

In the meantime, then, what is there better for you than to help and encourage the middleman? He is able to work far cheaper than you can because he handles many other commodities, and does not depend on honey alone to repay his

expenses. Where you would have one traveller exclusively for your purpose, he has a representative whose honey sales, however big in themselves, may not form 5 per cent. of his total turnover, and he has the power of pushing over a very wide area of ground where you have none. If you help him in the way I have indicated; if, further, you would make some bold advertisement of the merits of your wares; if you wrote up the newspapers on the subject; if you did a thousand little things well within your control to attract public attention, I am sure, together, you would produce results that if they failed to stagger humanity would at least produce the profoundest satisfaction to every member of this Association.

I spent my holiday this year among the Welsh mountains, where in all kinds of nooks and hidden places a spring would bubble over its basin to trickle into some little rill below, which in its turn leaped merrily downwards until it found a more sober burn, that in ever increasing volume swept into the river below. Then the art of man came and stopped the further flow of the watercourse with a giant dam, and so the waters of the many little springs were gathered into a vast lake that served to supply the great city of Birmingham. Alone, the little springs could at best quench the thirst of some casual passer-by, gathered together they ministered to the wants of a mighty multitude. This is a parable of what I have tried to set forth this evening. I trust the application is not a difficult one.

I had intended to finish here, but the events of the day force me to add one word in conclusion. From whatever quarter it may come, it is evident there are going to be large additions to the housing of agricultural labourers in the near future. There will be certainly a considerable amount of bee-keeping amongst these new homes, and you will have in consequence an enlarged scope of action. These coming producers will be from a class more than any other in the community needing your guidance and assistance, and a wise organisation on your part to render them substantial aid in the disposal of their produce will not only fulfil some of the best aspirations with which you, as a Society, have set out, but you will be making a valuable contribution to our country's prosperity, which every one of us has so closely at heart.

(*To be continued.*)

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at 23, Bedford Street, Strand, London, W.C., on Thursday, November 20th, 1913. Mr. W. F. Reid presided. There were also present Miss M. D. Sillar, Messrs. C. L. M. Eales, E. Watson, J. Smallwood, T. Bevan, J. B. Lamb, H. P. Perkins, and Sir Ernest Spencer; Association representatives: Rev. F. S. F. Jannings (Yorkshire), A. Willmott (Hertford and Ware), G. Bryden and G. W. Judge (Crayford), G. S. Faunch, and G. R. Alder (Essex), F. W. Harper (St. Albans), and the Secretary, W. Herrod.

Letters expressing regret at inability to attend were read from Miss Gayton, Miss H. Inglis, Messrs. T. W. Cowan, C. Pinker, A. G. Pugh, O. R. Frankenstein, E. Walker, A. Richards, G. J. Flashman, H. Jonas, G. H. Garratt, D. Seamer, and J. Price.

The minutes of the Council meeting, held October 23rd, 1913, were read and confirmed.

The following new members were elected: Miss A. M. Forsyth, Mr. F. W. Frusher, Mr. J. A. Claxton, M.A.

The Soke of Peterboro' and District Bee-keepers' Association applied for affiliation and were accepted.

The report of the Finance Committee was presented by Mr. Smallwood, who stated that the payments into the bank for October amounted to £36 9s. 6d., the bank balance at the end of October being £171 3s. Payments amounting to £28 6s. 1d. were recommended.

The Examining Board's report on the lecture test for first class certificate (expert) was presented by Mr. W. F. Reid; their recommendation to grant certificates to Rev. W. E. Mattinson and Mr. J. Herrod was adopted.

The report on preliminary examinations, held at Harleston and North Walsham, was presented, and it was resolved to grant certificates to Messrs. E. Johnson, A. V. Watson, E. Orford, B. Brown, and R. Ling.

The arrangement for insurance for 1914 on the same conditions as at present was sanctioned.

A letter was read from the Gloucestershire Association, thanking the Council for the lecture given by the Secretary of the B.B.K.A.

Next meeting of Council, December 18th, 1913, at 23, Bedford Street, Strand, W.C.

HOMES OF THE HONEY BEE.

A SWISS APIARY.

While in Switzerland last summer, the Senior Editor visited several of the principal bee-keepers with whom he is acquainted, among them being M. Pierre Odier. We have pleasure in showing a picture of one of M. Odier's apiaries, at Celigny, and also a picture of himself

feeding a stock by means of an outside feeder. A short account of his bee-keeping experiences is given in the letter which appears below:-

"It is with pleasure that in response to your request I send you a photograph recently taken, which has not been published, of my home apiary at Celigny, as you were good enough to say you would like to have such a view when you visited me here the other day. I also enclose a photograph of our feeder, which is applied outside the hive.

"I commenced bee-keeping in 1891, at the School of Agriculture in Lausanne, under the instruction of M. Ed. Bertrand. In 1892, my mother-in-law made me a present of her four Dadant hives, and it was with these that I made a start. Unfortunately, not long after this, foul brood broke out among my bees, and three of the colonies had to be destroyed. I then bought a swarm, and from that time took more and more pleasure in keeping and studying bees. I have possessed either alone or with associates as many as 250 colonies, distributed in several apiaries. At the present time I have only 120 in two apiaries. This is without counting the numerous nuclei used for queen-rearing.

"Unfortunately, our district is becoming gradually less favourable for bees, not only because the number of colonies has been considerably increased everywhere, but also for the reason that the methods of land culture have been considerably modified during recent years. For example, there is less sainfoin grown, which has been hitherto the principal bee pasturage, and for it have been substituted green crops, which produce greater and more certain returns. These crops are mown just as they commence flowering, and are thus useless for bees. I employ hives of the 'Dadant' type with eleven frames, and have also about twenty modified 'Dadants' with twelve frames. The principal harvest, which here generally commences about the 15th of May, suffered from the bad weather we had this year, so that the bees were hardly able to visit the flowers previous to the mowers having commenced to cut the crops before the end of the month. From this moment the activity of the bees diminished, for they lost time in wandering over the fields where previously they had been in the habit of working. They were searching in vain for the flowers which no longer were there. Generally, in the mountains and principally at the foot-hills, we have a second harvest of darker honey, which the bees are able to gather in the woods, on trees and flowers, but to obtain this we must have fine, warm nights to favour the secretion of nectar, but these we have not had this year, and there has been in consequence no dark honey. Moreover, hives became completely depleted of honey, and it was necessary this autumn to feed the bees liberally to enable them to winter, otherwise their death would have been certain.

"Contrary to their usual behaviour, our bees have been remarkably vicious this year, and have rendered work in the

M. PIERRE ODIER'S APIARY AT CELIGNY.

apiary very difficult. Hives had to be examined either early in the morning, and all work stopped at the rising of the sun, or by preference all operations with them deferred until the evening, so as to prevent the excitation of the bees, a condition which had become a veritable epidemic, and rapidly resulted in robbing. Some of the colonies were so vicious and aggressive that I would have willingly offered them to the first amateur of stings who would take them away, for it was a regular drudgery to examine them.

"In sending you these particulars, allow me to express my pleasant recollections of your visits to Switzerland.—PIERRE ODIER."

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

CLEANING COMBS IN THE OPEN AIR.

[8889] I must thank Mr. A. Ross (8888) for drawing my attention to what he considers a slip in my last notes, though I have little time for writing. I was quite serious. It may not be advisable to put out such combs for cleaning up in a general way, when there are many apiaries around, as seems to be the case with our friend; but with us Cotswold beemen, whose bees are fairly isolated, the plan works well. The great thing is to keep the combs far enough away from the hives, and leave them thus until every vestige of honey has been cleaned up, and no bees are on the combs. I have tried placing them back on the hives, but the bees only restore the honey in the centre combs, and dawdle about until they eventually have to be shaken off, which is far harder than handling full combs.

Now, we simply carry them out towards evening, right away among the bushes, stacking up the supers criss-cross with a lid on top to keep out the wet. In a week's time, when taken into the shed, they are not missed by the bees, and no robbing follows. Can anything be simpler? —A. H. BOWEN, Cheltenham.

THE DUTIES OF A TOURING EXPERT.

[8890] Mr. J. Herrod's contribution (page 456) to this discussion gave me much pleasure, the opinions of good practical experts being exactly what was wanted. In making a few final remarks, I shall be as brief as possible.

It is to be hoped that when Government inspectors are appointed they will be few in number, so that each may have a large district, and that their remuneration will enable them to travel in such a manner that they can perform their duties properly. After one year's experience they should know which apiaries can remain unvisited if the time runs short. Meanwhile I am not at all in favour of the touring expert doing jobs for extra payment, and I may add that my expert would have no leisure for the discussion of politics or any topics whatsoever beyond what concerned the apiary.

As to closing the entrances of neighbouring hives, I have often noticed that whatever a bee leaving the hive may do—and these are the bees that give trouble—one shut out from her home will try over and over again to get in, taking short flights solely to get a fresh line of approach. If the hive has been removed the bee's behaviour is very different. In that case she will settle anywhere.

As to the joining of two or three colonies in a skep in which they are to be confined I admit a mistake. It would be unwise to suggest this to a novice, however much one might wish to save him the expense of destroying an extra skep for each colony treated. Much depends on the size of the skep used and on that of the colony. As to whether the skep should be left bottom upwards or in its natural position, but raised up from the ground, I believe that the plan recommended will be found quite satisfactory at any time, provided that open-webbed material be used for closing the upper hole and the bottom of the skep. It must be remembered that with my plan the top hole is unencumbered and gives a good through ventilation. My experience is that the bees cluster all round the hole in the convenient hollow round the top of the skep, leaving the top opening nearly free. If you invert the skep you smother the top hole, and the air within remains comparatively stagnant.

As to taking the skep indoors, if you are so lucky as to have at hand "a dark, cool, airy place," where the bees may remain without fear of disturbance, there could be nothing better. I cannot recollect ever having had such an advantage. Cellars have been recommended and I can hardly imagine a less desirable situation. There should be a good current of air. One might do worse than suspend the skep to a stout branch of a shady tree.

It would be unreasonable to overload the willing or unwilling expert. Two requirements, however, he must be prepared to satisfy. Firstly, he must avoid conveying disease from apiary to apiary; secondly,

his methods and equipment must be such as to make it clear to a bee-keeper of average intelligence that there is no fear of his doing so. Here lies the difficulty, and in view of it I am unable to modify my original outfit.

The only literature I want the expert to carry is a lightly-got-up counterfoiled book of the forms suggested, and a note-book, and I trust that these will not be looked upon as the last straw. As regards the value of the note-book and the use of it, I cannot at all agree with Mr. Herrod. From my point of view, the value of the expert's tour would be sadly diminished if he were not prepared to furnish the authority employing him with trustworthy information. He should note the hour of his arrival at the apiary; the time spent there; the number of colonies kept, distinguishing healthy from unhealthy, in frame and non-frame hives; the name and address of the owner and whether he belongs to the local Association. The counterfoiled book would show the treatment recommended. In all, if done systematically, an affair of only a very few minutes.—H. J. O. WALKER, Lieut.-Col.

M. ODIER FILLING HIS OUTSIDE FEEDER.

BEE NOTES FROM DUMBARTON.

[889] The bees came but poorly through the prolonged winter of 1912-13, in this district, the spring being the most backward, stormy, cold and wet experienced for very many years.

About the middle of May, however, they began to make steady progress, but owing to the morning and evening frost there was little or no bee forage to be got, and with one exception, we had no swarms until about the middle of July.

The clover was comparatively a failure owing to the prolonged dry weather (with scorching sun during the day and cold winds at night) which prevailed during the latter half of June and July. We had a second crop of clover and a large crop of mustard, from which the bees not sent to the heather drew a fair supply, one bee-keeper securing about 70lbs. of honey of a rather thin quality.

The heather showed a profusion of bloom seldom if ever seen in this district. Walking over Carman Hill, on August 17th, with some friends to visit the bees, one of the party—a Devonshire lady—remarked, referring to the colouring, "If that were

reproduced on canvas anyone would say it was much overdone." Personally, I have seen heather in bloom year after year, and I cannot remember an occasion on which it showed the same intense light purple colour as on that day. Yet, with all its beauty, the honey-flow was quite disappointing, the "take" being, with one or two exceptions, about 30lbs. per hive.

The most successful bee-keeper in this district, so far as I have heard, was Scout-master R. Mumford, who began the season with two hives. On June 1st he had two swarms, and on June 14th one cast, his total "take" of honey being about 117lbs. This was, in my opinion, a most successful result, considering this is not by any means an ideal bee district.—J. C. B., Dumbarton.

SLOW FEEDERS.

[8892] In the communication you printed from me in last week's issue (page 466) the size of the hole is given as $\frac{1}{3}$rd of an inch: it should be $\frac{1}{8}$th.—H. WIGLEY.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

A Milk Route.—A dairy company in Michigan produce milk and honey. They have a milk route, of course, and in delivering milk they also sell their honey. The nice feature is that they use their regular pint and quart measure bottles and tins in delivering their honey as well as their milk, the bottles being picked up next trip. The idea is a good one. None of us may have a "milk route," but many of us might get in contact with those who have, to the mutual benefit of both.

How Far Bees Fly.—There are three factors largely determining the distances bees may fly to gather profitably. These are the topography of the district in question, the kind and distribution of the flora, and thirdly the way the wind blows. Bees located in the very centre of wide fields of nectar lying all round their hives will have little need to fly far from home, but when the supply is lying in one direction, when the source is intermittent, or when they cross a narrow valley they may travel far. Led on in a given direction, when the flora on which they have been working gets exhausted, they follow on and on further afield until they get into the habit of distant travel. In summer here bees follow one stretch after another of bell heather, and can be discovered working busily on white clover and the true heather; the supply is so copious that they work close to the location of their hives. Undoubtedly the prevailing winds are an important factor in deciding how far bees will fly in a given direction. Further, where the wind wafts the sweet perfume of nectar towards the apiary, bees will discover new sources more readily.

Useless Drones.—"Why will bee-keepers generally allow the rearing of thousands of useless drones? They are consumers and not producers, and it seems to me that they have much to do with inducing swarming. I know an apiary with few drones where the percentage was not over ten, while in another, not two miles away, where they tolerate an abundance of drone comb, more than half of the colonies swarmed." Our forefathers, when working with skeps, always looked for swarms soon after they saw male bees appearing on the flight-board in considerable numbers.

Feeding Sugar.—The question has often been asked, "Is sugar in every respect as good a food for bees as honey?" By analysis it has been determined that syrup, fed, inverted and sealed in the cells, when extracted contains practically as much nitrogen as honey. "Sugar honey from the uncapped cells showed 0.28 per cent. of nitrogen, and from the capped cells 0.36 per cent. Sugar itself contains no nitrogen. Dr. Kramer lately convinced himself that the bees must supply albumen from their own bodies when inverting the sugar, and, if so, there can be no question but that feeding great quantities of sugar must be harmful to bees. It must weaken their vitality and make them more susceptible to disease."

Longevity in Bees.—Mr. Beuhne, at the Australian Convention, brought up a very interesting point in queen rearing and its effects on surplus honey. It is this—the most prolific queen may not give the largest force of foragers. She does her duty, so do the bees, in raising a large population; but somehow of these a large percentage are not gatherers; perhaps there may be too many young bees. In other words, the bees of one colony may be longer lived than those in the other. Longevity may therefore be a more desirable trait than prolificness. We all have seen at times a teeming population come out low down the scale. May the above supply the key to the secret why this should be? Repeatedly I have known blacks, headed by a moderately prolific queen, beat an Italian stock overflowing with bees, and the explanation I set down in my own mind to the fact that the blacks were longer lived: and therefore, with actually fewer bees in the hive, turned out a larger force of foragers than the more prolific foreign strain. I do hold that with us blacks live longer than Italians, the latter being here a softer bee.

Swiss Bees.—Apropos of above, I have just come across the following in Mr. Dadant's notes of his travels in Europe: "The common bee, which is more accustomed to the climate, ventures out less readily (in inclement weather) and succeeds better. Apiaries are generally small in Switzerland, but bee-keepers are numerous and the bee associations number over 10,000 members. There is no doubt that they are a progressive nation. They have many improvements which we are only beginning to consider in America." Blacks are frequently accused of bad temper, yet Mr. Dadant tells us that among the German-Swiss bee-keepers he had used no bee-veil, although he carried one ready for an emergency.

SPECIAL LECTURES.

At the request of numerous readers we give below the places, dates, and subjects of lectures to be given by Mr. Herrod. Full particulars of time and place, where not stated, can be obtained from the Secretary of the Association concerned.

DATE.	PLACE.	SUBJECT.
Nov. 29	Olney	A Year's Work in the Apiary.
Dec. 2	Aberlour	Diseases & Enemies
,, 3	Aberdeen	A Year's Work in the Apiary.
,, 4	Morpeth	A Year's Work in the Apiary.
,, 5	Alnwick	Queen Rearing.
,, 6	Bishop Auckland (Cockton Hill Council School, 6.15 p.m.)	Diseases & Enemies
,, 8	Keswick	Diseases & Enemies.
,, 9	Liverpool	Bees in Relation to Flowers.
,, 11	Woodbridge	A Year's Work in the Apiary.

Queries and Replies.

[8885] *Foot-power Extractors.*—I should be very glad if you would kindly answer the following questions in the "B.B.J.":—(1) Is there, or has there ever been on the market an apparatus for working a honey extractor by *foot power*? (2) If not, do you think such an appliance would be welcomed by bee-keepers? (3) Other things being equal, would it not be far more convenient to drive the extractor, say 2 feet 6 inches above ground level, thus leaving space for the ripener and avoiding the necessity of raising the extractor when full? (4) What number of revolutions per minute should the cages of an extractor make under ordinary conditions?—C. H. N. P., Wilts.

REPLY.—(1) About thirty years ago such extractors were introduced on the Continent and tried here, but they had a very short existence, because it was found extracting was more easily controlled by the hand than the foot. (2) No, it would only add to the cost, and be less efficient. (3) Bee-keepers who have a large quantity of honey to extract have a raised platform on which the extractor is fastened down. This gives room for the ripener to be placed below. In Germany, where they use small frames, extractors are made with three legs, so that they are raised about 12 to 15 inches from the floor. A shallow pan is used to receive the honey, which can afterwards be put into a deeper vessel. Such extractors are hardly rigid enough for large frames, unless very strongly made and fastened to the floor to avoid rocking. (4) From 120 to 170 revolutions a minute, according to the condition of combs and density of the honey.

[8886] *Wooden Receptacles for Honey.*—Will it be advisable to put honey into wooden receptacles, the insides of which have been treated with a solution of methylated spirits and shellac to prevent the wood from absorbing any honey, or will the solution have any undesirable effect upon the latter?—T. S., Hants.

REPLY.—We do not think that the wooden vessels you describe will injure the honey, but it would have been better to have painted them inside with hot beeswax instead of the solution of shellac.

[8887] *Dealing with Infected Hive.*—I should be very grateful if you would kindly enlighten me through the columns of the BEE JOURNAL on the following points:—(1) I started keeping bees with one hive in the spring and lost them in October, owing to "Isle of Wight" disease. I have since cleaned out the hive, destroying frames, quilts, and dummies, and scorching the floor-board and brood-chamber with a Bunsen burner. Is that correct so far? (2) I melted down the wax in the frames. Is it safe to have this made up into foundation for future use? (3) If, using Ayles' remedy would its efficacy be lost if the hive were painted with it now for use in the spring? I ask this because it suggests itself to me that if one painted the hive with it now, one might, to a certain extent, reduce the effects of its use, recently described in "B.B.J.," because the smell of the creosote would probably be less strong three months hence. (4) I take it that after "Isle of Wight" disease it is unnecessary to destroy section racks and Porter escape. Would it be wiser to

spray these with Formalin? I apologise for the number of my questions, but I daresay many readers in my position are wondering the same things.—NOVICE.

REPLY.—(1) Yes. (2) Yes. (3) Use it now, and again in the spring. (4) You should scorch them with the blow lamp.

[8888] *A Beginner's Queries.*—Becoming interested in bees through watching a friend manipulating, I determined to start myself, and bought from him a strong, healthy stock. I am almost ashamed to tell you how badly I have bungled things. My stock came in early July, and had supers on. I brought them from the station in a taxi, and we must have displaced something as the bees were escaping all the way. The driver used some strong language, as he endeavoured to drive with one hand and keep off the flying bees with the other. When we had lifted them down he remarked, "Phew! It's the first time I've had bees for a fare, and I hope it's t'last." The bees settled down, and in August I took the supers off. They were not all full, but I put on some empty sections in order that the clover and heather honey should not be mixed. When the heather was over I took off the sections, and these again were not all full. Some I gave back to the bees and the rest I sold, realising from my one hive 21s. since July, and I am quite satisfied. Before wrapping up for winter, I took out two full frames of stores and replaced these with empty drawn-out frames, giving the bees about 12lbs. of syrup. I am wintering on ten frames. Over the frames I left a bee-way, and then put on a sheet of perforated zinc. I have given no candy, and do not see how I can now, as I might chill the brood when taking the zinc off. (1) Do you think they will winter safely? Of the two frames which I took out I tried to extract one and failed, completely spoiling it, so that I could not give it back to the bees for fear they might not find it pure. The other one I wrapped up, and am keeping it until spring. (2) Will it be fit to put back? It was beautifully capped. (3) About when should I put it back? I much appreciate your paper and the "Guide Book." Although I followed Raynor's receipt I had a terrible difficulty in taking off the sections. I was severely stung.—BEGINNER, West Riding.

REPLY.—We do not understand why you put perforated zinc over the frames for wintering. Perhaps you mean excluder zinc. In either case take off at once. You also did wrong to take out two combs of food; after what the bees had done for you it was not behaving well to remove their natural stores. Put back both the combs and put on candy; there is no brood to chill at this time of the year.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

October, 1913.

Rainfall, 6·25 in.	Minimum on grass, 29 on 22nd.
Above average, 2·15 in.	Frosty nights, 0.
Heaviest fall, 1·35 on 20th.	Mean maximum, 58·8.
Rain fell on 21 days.	Mean minimum, 47·5.
Sunshine, 90.8 hrs.	Mean temperature, 53·1.
Below aver., 29·1 hrs.	Above average, 4·1.
Brightest day, 3rd, 7·2 hrs.	Maximum barometer, 30·420 on 13th.
Sunless days, 2.	Minimum barometer, 29·241 on 29th.
Maximum temperature, 63 on 3rd.	
Minimum temperature, 39 on 12th & 24th.	

L. B. BIRKETT

Notices to Correspondents.

H. C. (Steventon).—*Pollen in Honey.*—(1) Equal weights of honey and syrup would occupy about the same space. (2) The pollen in the honey will not be injurious, but the taste will not be pleasant. It is quite fit to use for domestic purposes.

C. T. (Beaminster).—*Dwindled Stock.*—The bees in second hive died of old age. They were queenless, and therefore no young bees were reared to take the place of the old ones. In the case of what you call the first hive, we fear that they have "Isle of Wight" disease. If you send on a few for inspection we will let you know.

F. B. (Dunmow).—*Special Rates for Honey.*—(1) You can get a copy of the special forms from the chief office of either the Midland or the Great Northern Railway Co. (2) The price of grading glasses is 1s. 2d. post free.

Honey Samples.

M. G. B. (Woking).—No. 1 sample is from charlock and cabbage; a very good light honey. No. 2 is good in all points, especially in density. It is mainly from clover. No. 3 is a heather blend. All three honeys are fit to show in their respective classes. Nos. 1 and 2 are worth 10s. per dozen jars or sections; No. 3 from 12s. to 14s. per doz.

COTSWOLD.—The honey is quite fit to use for food.

R. W. A. (Birmingham).—The honey is pure, being from white clover and a little charlock.

Suspected Disease.

H. H. (Lanark).—There is every appearance of "Isle of Wight" disease.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

THE CONVERSAZIONE.

(*Continued from page* 474.)

(*Discussion on Marketing Honey.*)

Mr. Ceiley said he would like to tell them how he managed to get rid of his honey. Noticing that the family grocer had some jars of honey in a very dirty, fly-spotted condition, he went to him and suggested that he should purchase his (Mr. Ceiley's) honey, undertaking to be responsible for any that was returned by customers to him. This arrangement was mutually profitable, and worked very well.

Mr. Bryden's opinion was that the best way to sell honey was to get some of the best quality obtainable from one's bees, exhibit at one of the big shows, get a prize, say at the "Royal." The prize card could be placed in the window for advertisement purposes.

Mr. Frankenstein said the middle-man is necessary in any trade, for the simple reason that we cannot get on without him, because the method of disposing of produce is so very difficult. It also takes up all his time to attend to this side of the business if a middleman is to get a fair business profit. In the case of the small bee-keeper (in this country we are mostly small bee-keepers), a few hints might be of advantage to urge them to keep in mind the importance of putting up the honey in a business-like manner. They should build up a reputation for clean business dealing and remember that the reputation of anything English is mighty big. Another point is that if the Englishman goes round selling his own goods he has to get up a record to work upon. He (Mr. Frankenstein) did not mean to say what he paid for the honey he bought, but did not mind letting out the secret of what he sold it at. It was only because the firm for which he worked had a first-class connection and the connection was so good that he could defy all competition. He bought in 28lb. tins, but the honey must be of the best quality, such as prize honey from the "Dairy" or the "Royal" shows, and he sold at something like 60s. or 70s. per cwt. He knew many bee-keepers who had built up a reputation for their honey by exhibiting at the "Royal" and the "Dairy" shows. Now as to the suggestion Mr. Menzies threw out respecting a central committee to grade honeys. It is a very difficult thing, and there are many samples which are only fit for a low-class manufacturing business, therefore a great deal of trouble and expense would be incurred which would be difficult to recoup.

Mr. Herrod said he had been much interested in listening, because Mr. Menzies had hit upon one or two points of which he had had experience for a number of years. Mr. Menzies was not a bee-keeper, but undoubtedly he understood how to pack produce and sell it. The description of that badly packed consignment was quite a true one. It is astonishing the kind of package which is often sent by goods train. He had had honey sent to him which looked as though mice had been nibbling the sections, and in some cases old used sections had been glued together and filled again. Mr. Menzies pointed out the importance of creating a market for the honey produced, but he was afraid that in this country they were far too conservative (he did not mean in politics), and that people were not ready to adopt modern methods. It is astonishing how difficult it is to try and remove an old practice. Another difficulty is with the producer. Mr. Frankenstein himself can retail his bee produce, that is, of course, if the merit of the honey has been tried. Some time ago a British Honey Co. was founded, with a capital of some £2,000, which was soon lost in expenses. The British Honey Co. went into liquidation for the simple reason that the bee-keeper sold all his best produce at home, and sent the inferior grades to the company and expected to get the same price for it as he had received for the best. If the producer would consider the consumer he could get rid of his produce. Very frequently when making a purchase a person will ask for some particular brand. Noticing this, he (Mr. Herrod) and his partner made a note of the idea. They did not put "Pure Honey" on their jars, but designed a distinctive label, the idea being to have a brand that would be remembered, and it was astonishing how well it took. Mr. Menzies mentioned a good tip with regard to supply. This was one of the difficulties he also had met with. One may get a retail trade but the difficulty is to supply all one's customers throughout the year and every year with honey of a uniform quality. They made a practice of having one ton of honey of one kind always on hand, so that no matter when customers came they could get what quantity they desired. This particular honey was sold in the North of England at 11s. per dozen jars, no difference being made in a good or bad season, so that the consumer knew exactly the quality of honey he was going to receive and the price he had to pay. The producer seems to imagine the moment he gets a chance of selling his honey even at 4d. per lb. he should do so, instead of handing it to the large dealers and so getting a reasonable price. In his (Mr. Herrod's) opinion, it would not be advisable for the B.B.K.A. to turn itself into a trading company, as they would have people telling them that the Association

was run by the Council for their own benefit. Even to-day some people imagine the Council are getting something substantial out of the Association, whereas the members have to give their time and are allowed to pay their own expenses, as a favour! No, the Central Association should not take up the sale of honey, but adhere to the high standard it had always adopted and keep clear of trade interests.

Mr. Richards said that Mr. Menzies made a very good advocate for the middleman. He thought that bee-keepers in this country obtain a very small amount as a rule for their honey, some only getting 30s. per cwt. We do not want to see the time when we can only get 30s. It appeared to him that the difficulty was that the middleman was not able to find sufficient British honey of a good quality on such terms as would show a profit.

Gen. Sir Stanley Edwards said he only wished to say a few words in order to endorse what Mr. Herrod had just remarked about having a brand for honey. He recollected what happened to himself in the disposal of his honey some years ago. At present he had no difficulty in getting rid of the small amount he obtained, amongst his friends. If a great deal is produced it must be disposed of through the middleman. He used to send his honey to the Army and Navy Stores, but found that they put his honey into their own bottles, and he did not like it treated in that way. The Bee-keepers' Association he belonged to had labels of its own, and there was at the bottom of each label a number; and if any buyer had a complaint to make, the number was quoted to the secretary, and he could refer to the books to see who supplied the honey. He (Gen. Edwards) therefore supplied the honey with those labels to the Stores and after his protest the label was kept on: it became known as the "White Heather" honey, and he had never any difficulty in getting rid of it.

The Rev. F. Jannings said the question of the disposal of honey seemed to him to be more one of talking and telling people what an excellent article it is and describing the value and properties of honey. People talk about the high price of honey, and would not dream of giving 1s. per lb., but he was sure that this was quite a reasonable price, and could be obtained by a little exertion and talking and sending out samples.

Mr. Reid, in closing the discussion, said it was his pleasant duty to propose a vote of thanks to Mr. Menzies for his extremely interesting paper. He might point out that the B.B.K.A. does a great deal in creating a market for honey in the way of giving prizes at shows, &c. The Surrey Association also had a numbered label, and if any complaints were sent to the secretary the offender was not allowed to obtain any more labels. He proposed a hearty vote of thanks to Mr. Menzies for his extremely interesting and instructive paper. This was carried unanimously.

Mr. Menzies briefly thanked the members for their attention, and said he would not detain them longer, because there was very little for him to say. He knew that the first-class people can always get rid of their honey, but what he would like to know was what do the poorer classes do with theirs? The middleman cannot get the honey to buy. What is the country doing to help them?

Mr. Reid brought the meeting to a close by thanking, in the name of the Council, those members who had been good enough to bring interesting articles for exhibition that evening, which had added to the interest of the conversazione.

MANX BEE-KEEPERS' ASSOCIATION.

A most successful honey show, promoted by the Manx B.K.A., was held at Derby Castle, Douglas, on November 13th. The Association is much indebted to the committee of the Douglas and Isle of Man Chrysanthemum Society for the encouragement they gave to bee-keeping by inviting exhibits at their annual exhibition. Upwards of sixty entries were staged, being the best display of honey ever shown in the Isle of Man. The liquid honey classes caused keen competition, and very good honey was staged. The granulated class was poor in quality, and the sections were only moderate. This is, no doubt, due to the late season experienced here. Mr. T. J. Horsley, chairman of the Association, acted as judge, and made the following awards:—

Three Jars of Light-coloured Extracted Honey.—1st and special, Miss Pollard, Eaglehurst, Douglas; 2nd, Miss Winifred Faragher, Michael; 3rd, J. C. Watterson, Hope Cottage, Douglas.

Three Jars of Dark-coloured Extracted Honey.—1st and special, John Faragher; 2nd, J. Clucas, Gellings Foundry, Douglas; 3rd, Miss Pollard.

Three Jars of Granulated Honey.—1st and special, A. Watterson; 2nd, J. C. Watterson; 3rd, Miss A. Karran, Douglas.

Three 1-lb. Sections.—1st and special, J. C. Watterson; 2nd, W. Kermeen, Approach Road, Ramsey; 3rd, J. L. Lewin, Onchan.

The "Metropole" silver challenge cup, presented by Mr. J. P. Smith, was awarded to J. C. Watterson.

The committee of the Manx B.K.A. are delighted with their first show, and hope for still greater success next year with a good season.

About 4cwt. of honey was staged on a

prettily decorated stand by Mr. T. J. Horsley (not for competition). The Association is extending its educational work to all parts of the island, and have hopes of getting assistance from the Insular Legislature by way of a grant.—J. M. Gibson, Hon. Sec.

SHEFFIELD AND DISTRICT B.K.A.

The Sheffield and District B.K.A. gave a honey display at the Chrysanthemum Society's Show at the Corn Exchange on November 13th, 14th, and 15th. Two observation hives with live bees attracted much attention. The Judge, Mr. W. E. Richardson, secretary of the Yorkshire Bee-keepers' Society, awarded the following prizes in the competition.

Light Extracted Honey.—1st, W. B. Tallent; 2nd, J. H. Oldfield.

Light Granulated Honey.—1st, G. H. Peart; 2nd, J. H. Oldfield.

Heather Honey.—1st, S. Livesey; 2nd, E. Garwell.

Dark Extracted Honey.—1st, W. Tomlinson; 2nd, W. B. Tallent.

Dark Granulated Honey.—1st, W. Garwell; 2nd, P. Ridge.

Wax.—1st, W. Tomlinson; 2nd, W. Garwell.

Shallow-frame for Extracting.—1st, S. Linsey.—*Communicated.*

AMONG THE BEES.

By D. M. Macdonald, Banff.

ALL WORKER COMB.

I should like to group here several ways in which bee-keepers can secure this much to be desired requisite for a perfect brood-nest in a modern hive. Last year quite a number reported a large amount of drone comb being built by swarms, and this year again complaints are rife of a large percentage being discovered at the end of the season. It is a fact that, under certain conditions, bees will build all, or almost all, worker comb, and under other conditions mainly undesirable drone comb. For swarms there seems to be a relationship between the number of bees, the rate of income, the pace of comb-building, and these are again correlated with the laying of the queen bee. As a rule, a swarm hived on simple starters, with the number of frames relative to the size of the swarm, will, in the first ten days, build no drone comb. In the next ten days the rule is that little will be built, unless the flow is so copious that its storing is in advance of comb construction, and trenching on the regions requisite to the queen's ovipositing. Then drone cells are quickly built, possibly as the bees deem that larger vats are required, and that fewer of them will take up less time and hold more honey. If this is noticed in time, and storing room supplied in supers, bees will very seldom construct drone comb in the first twenty days a swarm tenants a new hive, providing that the brood-nest is completed in that time.

A frame, with starter of foundation, if placed in an established hive at any time from early spring on to the period of swarming, will almost inevitably be built all drone comb right down from the point where the impression of cell bases terminates; consequently any addition should be a full sheet of worker foundation or a fully built out comb. Yet it is possible not only to get such a colony to build true from starters, but they can be induced to finish off perfect worker comb from even partly completed ones of last season, and not only that, but they can be made to patch and repair old combs that have been cut up and mutilated to get rid of faults or patches of drone cells. The secret here is having the colony rather weak, just only strong enough to build, and withdrawing almost all the combs with brood and eggs. Leave, say, one comb of honey, and one with honey and a little brood, and add the frame or two you desire to be drawn out from simple starters. By withdrawing these combs when completed and replacing them by others, several very fine worker combs may be secured. In the same way nuclei, with young queens, may be induced to construct combs from starters, all of them being well and evenly built, and every cell a worker one.

Taking advantage of these two basic facts, when the opportunity occurs, of getting a cast to build its own combs, supply them with only about four or five, according to the number of bees, and from simple starters only they will make their combs all worker cells, unless something abnormal befalls. In each case with this weakling, or nucleus, or cast, if the weather turns out unpropitious it would be necessary to resort to feeding, because they can scarcely be expected to make bricks without straw. The secret of success seems to be the want here of the inherent desire bees have implanted in their hearts to swarm, and the instinctive knowledge that to make swarming a success drones are an utter necessity. With young queens at the head of the three specimen hives I have instanced, bees are fully aware that drones would be to them a superfluity of naughtiness, and, accordingly, they avoid all preparation for providing them. Perhaps, too, their gathering and their nursing just keep in line with their comb-building. I know that late swarms hived in the last days of July or the first week of August, invariably built all worker comb for me.

Their foreknowledge perhaps taught them that building drone comb, or even contemplating rearing drones, would be a wanton waste of time and material, and something which would make worse, and not better, their present condition and future success.

I believe that queenless bees, when they can be induced to build, will construct worker cells, although I will not guarantee a full percentage; but even this cannot be asserted when full sheets of foundation are given to a normal colony or even a swarm! As a rule, these will build all worker comb, yet I have known them tear down or change the base, and seek after their own devices, but these exceptional cases are a negligible quantity over a season or a series of years. The same may be said of contracted spacing advised for the elimination of drone comb. Past experience and recent experiments all tend to convince me that the above holds good when this plan is followed.

An upper story is a very good place for securing beautifully constructed, flat as a board, and all worker comb, if the colony operated with is a strong one, capable of filling the lower set of combs and clustering thick above, while a fine full flow aids the good work.

In the days when I did a considerable amount of driving, and, by uniting two or three of the driven lots, obtained a powerful force during the early part of September, I obtained some very fine combs of all worker cells. Great care was necessary to have all spacing very correct, otherwise bulging and too fat combs were produced readily. I always made it a point to have a queen mated during the current season to head the new stock. This subject is one well suited for discussion during the winter months.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

FERTILISATION OF QUEEN BEES.

[8893] Someone wrote earlier in the year recording observations on the fertilisation of a queen, which he witnessed. I have mislaid the number of the "B.B.J." containing his letter, but I merely desire to record that I, too, had a similar experience on August 22nd. I was walking past my queen-rearing hive (containing four two-frame nuclei) from which I expected the virgins on their wedding flights. My thoughts, however, were not on the bees at all, but I became conscious of a quite unusual buzz, which I find difficulty in describing. It was, in general, that of a drone, but more laboured, and more composite in nature. I naturally looked from whence it came, and was just in time to see the separation, the two bees literally darting in opposite directions. The vigour of flight seemed quite unimpaired in both cases. The queen did not return immediately to the hive, but evidently took a short flight, which lasted about three minutes, as I thought to complete the process of fecundation, which, to my mind, is an act of extraction on the part of the queen as well as an act of expulsion by the drone. If fecundation be mutually active, rather than active on the part of the drone, and passive on the part of the queen, then it is reasonable to suppose that a short after-flight would be necessary of at least more than 12 feet (this was the approximate distance from the hive on the occasion in question). It would be necessary in order that the queen might obtain the maximum amount of pressure on the reproductive organs, for such pressure is obviously best obtained during *unrestricted* flight when the air-sacs and tracheæ are most completely distended, and I cannot believe that flight during coition can be unrestricted, for the queen at all events. Consequent upon the great pressure exerted by the distended air-sacs on the queen organs a more complete suction would be caused when, at a suitable moment, that pressure was released by the voluntary expulsion of air from the sacs. This would be the active process of the queen, and, to my mind, the critical moment of her life. The fact that the drone organ is retained by the queen after the departure of the drone lends weight to this theory; otherwise, why is it left, and why the suffering for the drone, and *perhaps* speedy death? If it were wholly passive on the part of the queen, or if the spermatophore were actually discharged during copulation, I fail to see its necessity. The reflex muscular action of the drone genital organs after being severed from the nervous control of the ganglionic system cannot be sufficiently strong to accomplish the expulsion of the spermatophore for which, according to Cowan ("The Honey Bee," page 133), great force is required.

My belief, therefore, is this: During actual coition the drone, whose flight is freest, is the active member, and after the separation the queen becomes active, and extracts during the return flight to the hive, that is, during absolute freedom, the necessary spermatophore. The completion

of the process by the time the queen returns to the hive is seemingly indicated by the promptness with which the workers remove the evidences thereof.

Failure on the part of queens to perform their part successfully might possibly account for some cases of drone-breeding queens.

It would be interesting to learn from those who happen to see, or have seen, the mating of queens close to their hives if the after-flight is the rule. I certainly believe that more cases of mating take place well within the scope of human observation than are usually suspected, especially when virgin queens, cognisant of the danger of procrastination, venture out on days which are not really "drone-days."—Geo. Steventon, Bisley.

NEW ZEALAND v. BRITISH BEE-KEEPING.

[8894] One cannot help contrasting the conditions of the bee-keeping industry in Britain and New Zealand, when reading the British Bee Journal. In the former country the progressive bee-keeper, who is out for conducting bee-keeping on commercial lines, has no protection whatever from those who, either through downright ignorance or wilful carelessness, are the means of making abortive all attempts at progress. The result is, British bee-keeping is far behind that in any other English-speaking country, and I think I may venture to say in almost every country.

Notwithstanding the tremendous setback your bee-keeping industry has suffered for the past six or seven years (and is still suffering) from "Isle of Wight" disease, nothing of a practical nature has been done by the powers that be to suppress or even to mitigate the evil. Excuses have been made for not introducing legislation into Parliament, and these have been accepted in a spirit of self-sacrifice which, to say the least, is extremely difficult for a New Zealand bee-keeper to understand. What, however, is to be expected when one of your regular contributors—L. S. Crawshaw, p 357—is so far behind the times as to back up an immovable comb hive—the straw skep—and welcome its advocacy by others?

Your able contributor, "D. M. M." (p. 345, previous number), on the contrary, quotes with evident satisfaction a clause in the Texas Bee Diseases Act, recently passed, wherein the persons in charge can compel the transfer of bees from immovable to movable comb hives, and also quotes the editor's remarks with regard to this clause:—"This regulation, which looked at first tyrannical, is becoming popular all the world over."

How does bee-keeping in New Zealand stand? "D. M. M.," on the same page (345), says:—"We are threatened with a large importation of New Zealand honey 'branded' with the Government graded mark, but sent by the Federated Bee-keepers. The first shipment consists of eleven tons, and a second similar quantity will follow in a month."

The total quantity exported from all parts of the Dominion and ready to export is not far short of 100 tons for the twelve months. Now, what has made this export trade possible? Nothing but our legislation for the promotion and protection of commercial bee-keeping, and if you asked any one of our commercial bee-keepers which he considers the most important feature of the Apiaries Act, his answer would be the abolition of box (immovable comb) hives.

Six years ago we had no export trade worth mentioning, and no prospect of any until we secured legislation. Now we have a trade established on a sound basis, Government grading of honey, and, what is more, disease is fast disappearing from all parts of the country, making commercial bee-keeping pleasurable and profitable, instead of the continuous heartbreaking uphill fight it used to be. My advice is, Agitate! Agitate!! Agitate!!! for legislation, and get rid of skeps and all other forms of immovable comb-hives.—I. Hopkins, Auckland, New Zealand.

OWNERSHIP OF SWARM.

[8895] How are bees classed, as domesticated or wild animals? If the latter, then, apart from the question of trespassing, how can one possibly *claim* a swarm in a neighbour's garden?

You published a letter of mine on this matter in a former issue, but there are two cases reported in November *Record* which tend rather to confuse matters.

In my opinion (I hope I may be proved to be wrong), bees are wild insects, and no one can claim them from a neighbour's garden if the said bees stray (swarm) there. It is on the same lines as a wild rabbit which strays into a neighbour's field. That neighbour has the right to shoot or trap it. Judge Gye, at the Petersfield County Court, in one of the two cases mentioned above, is reported to have said, "The law on the point was that if an owner of bees saw them swarming he had a right to follow them, and as long as he could keep them in sight and take them they were his property."

I know that this is a very old and common idea, but I should be much more convinced if one could inform me by what *law* one can trespass on another person's property and take "wild" insects.

I happen to know that several of the

above-mentioned judge's decisions have been altered, and I have my doubts as to whether his decision in this case would not be upset if appealed against.—A NOVICE.

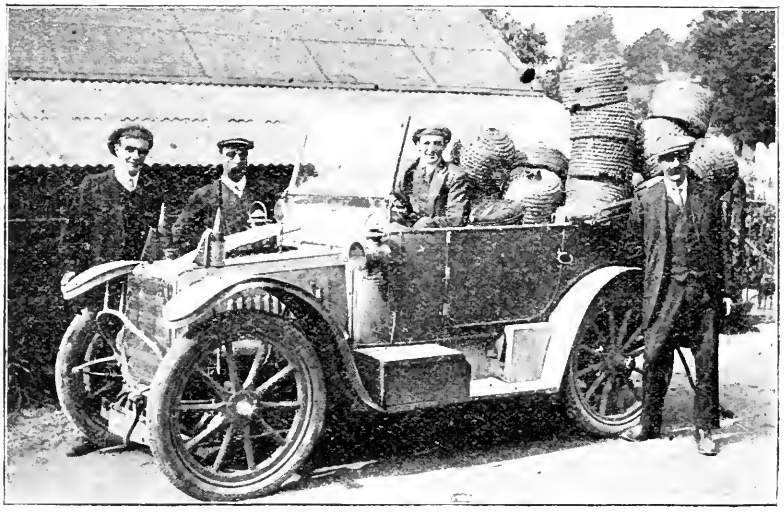
[Each case has to be taken on its merits. The law is, as defined by Judge Gye, just as in the case of shooting. If game is shot on one owner's land and falls on the preserves of another, it can be fetched without liability for trespass.—EDS.]

A BEE-DRIVING EXPEDITION IN WILTSHIRE.

[8896] At 9.30 one delightful morning in August a happy quartette assembled for the purpose of a day's bee-driving. First let me introduce my companions and myself to your readers: Mr. Emerson, seen on the extreme right of the photo, Mr. Field on the extreme left, Mr. Cabley next, and myself seated in the car, all enthusiasts, with more or less knowledge of the pleasant and profitable hobby of bee-keeping.

Leaving Stroud, we speed up the pretty valley of Chalford, making our first stop at Kemble. On calling at an old farm-house we were greeted by the farmer with obvious pleasure, and there lined up before us were a dozen skeps with a large stone to mark the seven we were to be allowed to drive. The skeps were very heavy and full of bees. After the driving was done, I carefully examined them, and found all healthy, not a single sign of disease of any kind. Leaving the driven lots ready to be tied up on our return, we proceeded to Oaksey, where we drove three more skeps, which we treated in the same manner as the first, after a careful examination for any sign of disease.

Finding all healthy, on we went another five miles to Rodmarton. There we discovered a farmer with twenty skeps, but were only allowed to drive two of these. We then adjourned for lunch, for which we were quite ready, the pleasurable excitement and work having made us hungry. We settled down for an hour and talked of bees generally, and of the healthy condition of the skeps in particular. Starting again, we soon reached Minty, where we drove eight more skeps, again looking in vain for signs of foul brood. Proceeding about six miles further we filled up our remaining skeps, making in all twenty-seven lots. Returning, we called at each stopping-place and secured our treasures, and soon sped homeward with our carload of bees, and



READY TO START ON A BEE-DRIVING EXPEDITION.

a good day's work before us in uniting, and getting the bees fed up for winter. We confidently expect they will do well next summer, as our experience of driven bees has been that they will yield as much surplus the following season as any stocks; in fact, stocks derived from this source headed the list in 1913 in my apiary. Having all new combs and being healthy, they seem to have good hearts for hard work, and repay all the trouble bestowed upon them. Here I will pause to put in one word for the much-maligned old skep, which some call the hot-bed of disease and centre of contagion, which makes bee-keeping, as I have read, almost impossible. In my opinion, quite the opposite is the case. I grant skep bee-keeping is not the most profitable method, but why should the cottager bear the sole

blame for disease-spreading? We examined many frame-hives this summer, only to find, I am sorry to report, on every occasion except two, disease present in all stages. Some of these frame-hives had been standing empty for many a summer, and these are the sources of the spread of foul brood. The frame-hive being more expensive when purchased makes the owner loth to part with a single frame. In my opinion, it is not the skep that is the trouble, for each year each skep is totally cleared, and is furnished with a swarm.

Legislation is certainly needed for the "tired" bee-keepers who profess to keep bees on up-to-date methods, and who are ready to blame the innocent skep in many cases for their misfortunes. If these lazy keepers of bees awake to the fact that the idle empty hives should be removed and cleaned, I think that the disease would be minimised, for prevention is better than cure. I hope, if the editor finds space for my letter, that it will be of interest to the brother bee-keepers of whose doings I read, and enjoy, each week in the BEE JOURNAL.—A. W. ENGLAND, Stroud, Glos.

HONEY JUDGING.

[8897] The paper read at the B.B.K.A. conversazione by Mr. Pugh, on "Judging Honey," is full of good points, and I am glad that his opinion coincides with my suggestion (8810, page 374, Sept. 18th) that a competition on the subject of honey judging at the Royal Show would be helpful. He also mentioned the Grocers' Exhibition, and I agree that such a competition there also would be advantageous. The "Royal" is best, however, as it is held in different districts each year, and this gives the opportunity to those who could not get up to London.

Mr. Pugh rightly began by dealing first with the judge and the qualities he must possess, putting experience first. He next spoke of how such experience can be acquired. I quite agree with him that sufficient opportunities are not available for training the requisite number of judges, and, as he points out, it is not every man who has obtained the first, second, or third-class certificate in bee-keeping who is qualified to judge honey on scientific lines and arrive at a correct decision. The knowledge must be acquired by practice, it is not to be gained in one spring from the bottom to the top.

The County Association that inaugurated a honey-judging class is evidently a progressive one; this competition will help to create an interest if it does not already exist in that important matter of judging at shows. Mr. Pugh also mentioned the free samples taken by the various critics to see how the judge arrived at his decision and if his opinion was in accordance with their views, and, as he says, this is the only means would-be judges may have of testing their own capabilities until a competition for judging is established. It is true there are not many judges who would care to have an inexperienced man taking part in the work, unless it happened to be a special friend. Mr. Pugh is right in saying that flavour should stand first in considering an exhibit, colour being chiefly a matter of entering in the right class. Then comes density, in determining which some kind of instrument, as he suggested, would be very helpful when big classes are in question. I would remind him that this test must be made by measurement combined with the ascent of the air-bubble. Aroma, though not considered so important as the other points, is yet partly the medium by which the source of the nectar is determined. His remarks on granulated honey are very good indeed; with honey in sections the only possible way of judging is to examine them so that one can detect any attempt at faking the sealing of the cells, note the number of empty cells or open corners, and last, but not least, test the flavour, which can be done without damaging the exhibit if a proper glass-taster is used. Incidentally, one can make sure that they are clean and of good colour.—J. S. LAWTON, Hon. Sec., Bridgnorth and District B.K.A.

HONEY AND POLLEN.

[8898] Mr. Macdonald is full of thought this week (see p. 478). Certainly some test more than mere prolificness must be brought out for the selection of the best colonies to be bred from. Honey production of last year plus a daily spring record of time of rising and numbers at work at given hours will make the beginning of a table of points. Arising out of the question how far do bees fly, I should like to put in a little problem that no doubt someone can solve from his own experience. Take two stocks, one of them standing in a sainfoin field, the other a mile away, and getting its honey from the same source. Will the greater length of time given during the flight home for the working of the pollen-sifter in the honey-sac result in a clearer product? I have sometimes tried to work out the cost in honey of the innumerable two-mile journeys to see how much less surplus the distant hive would make. But if the engines are stoked on pollen only that part of the question need not trouble us much. There is still, of course, the loss of time, about half a minute on each 50,000 journeys a day. Can any reader say whether a clearer honey is

stored when the bees have a longer distance to bring it home?—G. G. DESMOND, Sheepscombe, Glos.

BEES IN SOUTHERN RHODESIA.

REMOVING BEES FROM TREES.

[8900] Being a constant reader of your BRITISH BEE JOURNAL, I have noticed lately numerous inquiries as to removing bees from trees, and as it may interest your readers, I give you my own experience out here.

In Rhodesia, of course, it is usually rather too hot for taking bees all through the day, so I always make it a rule to start as early as possible in the morning (to-day is 102deg. in shade). I take with me a veil and gloves in the first place; some people may say "very unnecessary," but I confess it without being ashamed in the least. With the wild bees out here gloves and veil *are* necessary, as more often than not one will get a frightful stinging.

But I am wandering away from the point, as bees do not sting badly in England. The next necessity is a receptacle for the bees. This is a beehive—*every time that*, and nothing else. The beehive I have fitted up with eight plain frames (no foundation in whatever), and also a dummy. Over these frames a quilt and the roof. I forgot to mention a floor-board, a fairly big one running up to the entrance. The hive is put down in close proximity to the tree, where the bees are located, and now the fun begins. I always take a native boy with me as my assistant. The bees' nest, for instance, is, say, 4ft. above the ground. The nigger takes his axe and begins chopping. Result, numerous stings. After he has chopped a hole large enough to take out a piece of comb, the hand is inserted, and the comb is broken by just pulling it on one side. It breaks off just at the top, and is a better and gentler way of taking it out than cutting with a knife. The comb is laid on the hive roof, and is cut so as to resemble the shape of the frame, but in most cases it will be found that the combs in these nests are small. Underneath the comb is passed a piece of tape, which is tied gently, just tightly enough to hold the comb in its place. The whole of the combs are treated in this way, care being taken to see that the cells are the right way up. The frames are put in the hive, the quilt on the top, and the first part is finished.

Personally, I do away with a smoker altogether in this rough job, for, after all, it is nothing else. My plan is to have a fire handy, quite a small one; this I find even outside has the effect of subduing the bees. I take a small fire brand which is charred, so that only smoke is coming from it. I hold this a little way away from the hole and blow the smoke inside. The bees by now are clustering *inside*, I have taken over twenty nests the last six weeks alone, and I have never known a case in which they have come out without my making them. A few puffs will suffice, and out they come pell-mell. They settle, as a rule, about 6ft. from the ground, but I think I can safely say that this varies with the height of their entrance hole. The bees settle on a small branch we will say. Some sécateurs are now brought out, and the branch nipped off without the *slightest jar*. (This is important, as a jar is fatal.)

The branch is carried bodily and laid down on the alighting board, and the bees stream in as hard as they can go. A very pretty sight, I think. Generally, a few bees will cluster outside, and I take a flat board and scrape them near the entrance. When all have gone in I place a piece of queen-excluding zinc over entrance, and the job is finished. The boy in the evening carries the hive on his head to its final resting-place, and it is left there for thirty-six hours without being touched.

After thirty-six hours I choose a suitable time, and take out the frames one by one and replace with wired foundation, giving as many frames as the bees can comfortably occupy and filling up the vacant place with a dummy.

And now you will say, "But why put the old brood in at all; why not use foundation in the first place?" My answer is this; bees will not always enter the hive with foundation alone. I have been with them all day long, from sunrise to sunset, and they would not enter the hive, while, if brood is there, in fifteen minutes they go in. I cannot help thinking there is something in this. My second reason is that the bees get used to their new quarters more readily, as it is well known that they will not leave their brood. After the foundation is all put in, I leave the hive alone for two more days, and, if after this period they are working well, I take away the excluder zinc.

Bees work well in hives in this country, but it is only advisable to go in for them to get honey for one's own use. As much as 3s. is paid for a section, but, of course, the demand is very small. Bee-keeping is a very great hobby out here, and I have now taken over fifty nests, mainly from trees, ant-heaps, rocks, and ant-bear holes.

The honey-flow has started now, and the bees working on the purple wistaria are a sight worth seeing. I have picked up many good tips from the natives (Matabeles) here, but, on the whole, their knowledge is very crude; one thing they believe is that pollen mixed with water results in pure honey! Many white people believe that, though! Your journal is

sent on to me by my father (the Rev.) E. H. Oldham, Stamford Rectory, Worcester. He has about thirty-five colonies, and bee-keeping is a great hobby with him. He is generally interested in my letters to him *re* my "Rhodesian bee-keeping." With every good wish to your paper.—H. OLDHAM, Private Bay, Rhodesia, September 29th.

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS

Creosote for Uniting (p. 425).—Those experiences with Ayles' cure suggest that creosote may prove to be a great help, if not, indeed, the one thing needful, in uniting bees. A division-board, soaked in creosote, might be placed in each hive, and the hives closed for a short time. The bees could then be united in one of the hives between two treated boards, and the hive again closed. Later, the boards might be removed, and the entrance opened, this operation being done preferably in the evening. The Claustral device would be of great service in the above manipulations. A modified form of such device might easily be made to apply to the ordinary alighting-board. Carefully made, in such a way that the light was excluded by a right angle at the points of contact, such angles being painted dull black, it could be removed or applied in a moment.

Stung! (p. 425).—Apropos of the unexpected benefit received from stings, the following unsolicited testimonials may be of interest:—"I have suffered since birth from the painful form of paralysis which caused so much unnecessary suffering to the late Mr. George Washington (afterwards the father of his country) in his early years. No amount of contortion gave me relief. Recently, I hobbled down my garden to see a stray swarm, when one of the bees approached me surreptitiously from the rear. I immediately ran 100yds. in even time.—PARALYSED. P.S.—I can now lie quite easily." "You will remember my being stung in the ear by one of your bees. You will be interested to know that I can now hear droning and buzzing noises, which are quite inaudible to my friends. I may add I have a thick ear.—AUDAUX." "I have suffered from night-blindness regularly once a week for years. Last week I got badly stung, and saw three stars.—MARTELL. I may add I have a swelled head." B. Minor writes: "Dear Dad, the other day I followed a swarm out of bounds, and got jolly well stung for it. I am now top of my form. P.S.—Tell the mater the honey-cake was top hole. I have no pain, dear mother, now." I had my own last sting of the season to-day, November 24th, through wilful and unseasonable interference with bees, but so far have been unable to detect any increase of natural powers.

Bees in an Awkward Position (pp. 417, 428).—To seal up a stock of bees under the weather tiling of an old house would probably require more mastic than Mr. Moir imagines, as such tiling usually provides bee-way in all directions. Even if accomplished, unpleasantness might ensue from the mass of dead bees, and ultimately fermenting honey. A better plan might be to engage the services of Mr. J. C. Bee Mason. No one who has seen his pictures can doubt his ability to deal with the case, if it can be dealt with at all.

Keeping Bee Accounts (p. 434).—The endeavour to induce bee-keepers to keep accounts is admirable, but Mr. Smallwood's attempt to combine the whole of the accounts comes to grief, as such combinations may easily do in unfamiliar hands, over the item of stock. Mr. Smallwood makes the serious error of entering the stock on wrong hands. Thus, Stock, 1913, should be entered under his Payments, and Stock, 1914, under Receipts. Otherwise increase of stock reduces profit. Increase of stock is here included twice over in the same column, once as Purchases and again as Stock, 1914. Obviously this increase might have been sold, and would then appear under Receipts; either Stock or its equivalent being thus in the hands of the bee-keeper. I do not know whether this is sufficiently clear, but it is easy to see that Stock in 1913, and subsequent increase, less sale, depreciation, and loss, should balance stock in 1914. Otherwise, if the whole of the stock were at once sold, the accounts would show a profit of £20! As it is, the accounts show an error of £5, and the item of Profit should read £11 10s. 6d., a very admirable result from £10 worth of stock. Here, at least, is the answer to Mr. Smallwood's own query: "Does bee-keeping pay?" If Mr. Smallwood will accept the above correction, and rearrange the accounts in accordance with ordinary form of hand, including the perhaps arbitrary usage of the terms "To" and "By," such a simple method of arriving at the result of the year's working may be of considerable use to the small bee-keeper, whose transactions are usually for cash.

Foul Brood in Italy (p. 436).—Judging from information given to me by Dr. Kramer, I should hardly have thought the country so free from disease as Signor Heischmann's letter would appear to imply. I am thinking more particularly of the North of Italy and the comparative immunity of Italian and Swiss bees.

Such immunity probably depends upon protracted acquaintance with disease itself, but the suggestion that sugar diet may affect constitution is not to be dismissed off-hand. It has, indeed, been advanced before, but considerable observation is needed before it can be unreservedly accepted.

Queries and Replies.

[8889] *A Deserted Hive.*—Will you kindly say in your next issue of "B.B.J." what has happened to one of my stocks of bees? I had seven, which I hoped to carry over the winter. They were all working merrily on blackberry and ivy up to the middle of October, when I made them all snug for the winter. Yesterday (November 26th) I noticed the bees of one hive a little more than usually excited, and although a dull and wet day, were flying very late. I examined the hive this morning, and found it empty of bees, but full of stores, with a small quantity of pollen, no brood, a few queen-cells, and the capping of honey very dark. I have tried to extract a couple of frames, but find it difficult, as the honey is very thick. I may say that drones were flying from this hive late in October. The stock had swarmed twice during the summer.—F. Truscott.

Reply.—The colony has evidently died out through queenlessness.

GLOUCESTERSHIRE B.K.A.

On Wednesday evening, November 12th, a lecture was given at the Northgate Mansions, Gloucester, by Mr. W. Herrod, F.E.S., Secretary of the British Bee-keepers' Association. His subject was "Diseases and Enemies of Bees," illustrated by lantern slides. Mr. G. N. Walker, of Wotton House, occupied the chair, and there was an excellent and representative attendance, including a number of ladies, from the city and county. Mr. Herrod is noted as a lecturer and practical bee-keeper throughout the kingdom, and displayed a complete mastery of a difficult subject, which combined with a wonderful facility of expression and a rich vein of humour, kept his audience enthralled for an hour and a half. The lantern illustrations were of a unique description, and must have been the result of patient and protracted study, as in the case of Mr. Kearton's studies of Bird Life. The subject was well selected, in view of the ravages of "Isle of Wight" disease, which are a deadly and increasing menace to the well-being of an industry reckoning its followers by many hundreds in Gloucestershire alone. Mr. Herrod alluded to the absolute necessity for legislation, if genuine bee-keepers were to be protected from the supineness and neglect of those who merely "kept bees." A hearty vote of thanks for his brilliant lecture was proposed by Rev. F. H. Fowler (Hon. Secretary of the County Association), seconded by Mr. A. H. Bowen, of Cheltenham, and carried with acclamation. In acknowledging the vote, Mr. Herrod said that his hearers would best repay him by doing their utmost to support the County Association in its self-denying work for the cause of bee-keeping. He invited questions, and was never for a moment at a loss in fully satisfying his "hecklers." Votes of thanks to the Chairman, and Mr. Pitcher for his manipulation of the lantern, concluded the meeting. The Hon. Secretary will be glad to enrol new members for 1914, and will gladly furnish any information as to the Association and its objects. —*Communicated.*

Notices to Correspondents.

Honey Samples.

J. C. F. (Kilwinning).—No. 1 sample is from white clover, and is good in all respects, except density. No. 2, a pure honey, good in colour and consistency, but lacks flavour a little. It is not necessary to adulterate to get honey of this thickness; the density is influenced in various ways, such as time of gathering, the soil upon which the forage is grown, &c.

L. Chester (Surrey).—The early honey is from charlock and clover, the later from mixed sources.

Y. W. B. (Brownhill).—A very nice honey from white clover and charlock, quite good enough for show purposes. Nicely put up, and of even granulation, no air-spaces spoiling it; worth 10d. to 1s. per lb. retail.

W. F. J. (Anglesea).—Mainly from ragwort, and will be difficult to sell on account of the strong flavour.

Suspected Disease.

E. H. W. (Stoke Poges).—The bees are affected with "Isle of Wight" disease, for which there is no remedy.

J. D. (Swanwick) and W. Francis.—We regret to say that the bees have died from "Isle of Wight" disease.

C. T. (Beaminster).—The bees are not diseased, but simply overloaded with food.

W. C. H. (Essex).—A bad case of "Isle of Wight" disease.

Editorial, Notices, &c.

REVIEWS.

Queen-rearing in England, by F. W. L. Sladen, F.E.S. (London: Madgwick, Houlston and Co., price 1s. 6d. and 2s. 6d.). The first edition of this book appeared in 1905, and it is quite natural that during the time that has elapsed the author should have found it necessary to add much important matter derived from additional experience, so that the book before us may be said to be re-written. Mr. Sladen, who is now in Canada, where he is occupying the position of Assistant Entomologist for Apiculture in the Department of Agriculture, had for many years before his departure devoted his time to rearing queens and improving the race of bees in this country. Mr. Sladen's career is an interesting one, for he started keeping bees with the intention of earning a living from them, was successful in producing and selling the honey, and had to go to other bee-keepers to help him to supply the demand which he had. He tells us that while he was able to earn sufficient to keep himself, it was not enough to support a family as well. He also had a longing to become more intimate with his bees, and was able to gratify these two desires by taking up bee-breeding and specialising in queen-rearing.

In this book we have the best methods described in a clear and succinct manner, so that anyone following the instructions carefully cannot fail to succeed in rearing queens. It is the result of fifteen years' experience in developing and managing a queen-rearing apiary as a commercial undertaking on the coast of Kent. The author, besides giving the various methods of queen-rearing suited to the British climate, describes the different races of bees and their characteristics. There is a chapter on breeding for improvement, which is a digest of the author's lecture on "Mendelian methods applied to Apiculture," given under the auspices of the British Bee-keepers' Association in 1912. Bee-keepers will be glad to have this in such a handy form, and Mr. Sladen has also added an article on "How pollen is collected by the honey-bee and the humble-bee, &c.," which appeared in the "B.B.J." in 1911. The book has been enlarged by thirty additional pages, is well illustrated, most of the figures being new ones. A pleasing feature is the photograph of Mr. Sladen's home at Ripple, near Dover, which was built from the profits derived from breeding bees and queens in Ripple Court Apiary.

We have much pleasure in recommending the book to those who wish to make themselves acquainted with the best methods of queen-rearing for this country, and feel sure that all will be interested and pleased with the amount of information the book contains.

MIDDLESEX B.K.A.

The annual general meeting of members of this Association was held on Thursday, December 4th, at 23, Bedford Street, Strand, kindly placed at their convenience by the proprietor of the BRITISH BEE JOURNAL.

J. B. Lamb, Esq., presided, and the meeting was well attended.

The report and balance-sheet for 1912 were presented and accepted. From the former it was evident how the epidemic of "Isle of Wight" disease had decimated the colonies in the county, and thereby reduced the number of members since the season 1910. However, as compared with 1911, there had been an increase, and financially the Association stood in a very much better position.

The president, vice-presidents, committee, and other officers were elected. Mr. W. Herrod was again elected hon. secretary and Mr. J. Smallwood was appointed expert.

Mr. J. Smallwood read a paper on "Learning Bee-keeping," after which there was a very interesting discussion.—*Communicated.*

THE W. BROUGHTON-CARR MEMORIAL FUND.

In spite of repeated appeals, this fund still stands at an amount far short of the £100 desired. Up to the present moment £76 7s. has been subscribed, and, having waited until the honey harvest has been gathered and disposed of, so that bad times cannot be pleaded as an excuse, we now make a final appeal to the bee-keepers throughout Great Britain who have not already subscribed to make up the amount. The memorial will take the form of a Gold Medal, to be awarded at one of the leading shows; the die is already cut, and the necessary funds to provide the gold each year for the medal are all that is now required. Therefore the excuse made by some that they would give if they knew how the money was to be expended cannot now be advanced.

The man who designed the "W.B.C." hive, and the metal ends bearing the same initials, spent his time and gave his ideas absolutely for the benefit of the craft (he reaped not one iota of advantage in cash from his inventions), and we cannot believe that bee-keepers in Great Britain are so lacking in gratitude as to permit this token in memory of his unselfish work for others being revived only once in *three* years, instead of, as it ought to be, every year,

for the lack of a few pounds. Some have been generous and grateful enough to give twice over, and, needless to say, it is not to these or even to those who have given their mite that we appeal, but to bee-keepers who have not given at all.

We refresh the memory of our readers by printing a hitherto unpublished photograph of Mr. Carr, taken by the Junior Editor, showing him at the desk where he spent many hours each day for many years, working for the benefit of bee-keepers. True, it was his profession, but we know from experience how many hours have to be spent, in addition to the time occupied in the business portion of literary work, in helping others. We cannot say more, but if our appeal and the photograph do not have the result we hope for, our estimate of the British bee-keeper is sadly at fault.

THE LATE W. BROUGHTON-CARR.

NECTAR-PRODUCING PLANTS AND THEIR POLLEN.

By Geo. Hayes, Beeston.

BUCKWHEAT (*Polygonum fagopyrum*).

No. 26. NAT. ORDER. *Polygoneæ.*

(*Continued from page* 363.)

Bees are extremely fond of this flower, which yields nectar in abundance. In America it is not uncommon for it to be grown for bees as well as for the grain, which, when ground, is much used, but I am not aware that this is done in this country, although I know that in some parts of England buckwheat is grown extensively, and a good deal of surplus honey is obtained from it. The colour of the honey is of a reddish-brown, similar to heather honey, and has a taste peculiarly its own and easily recognisable.

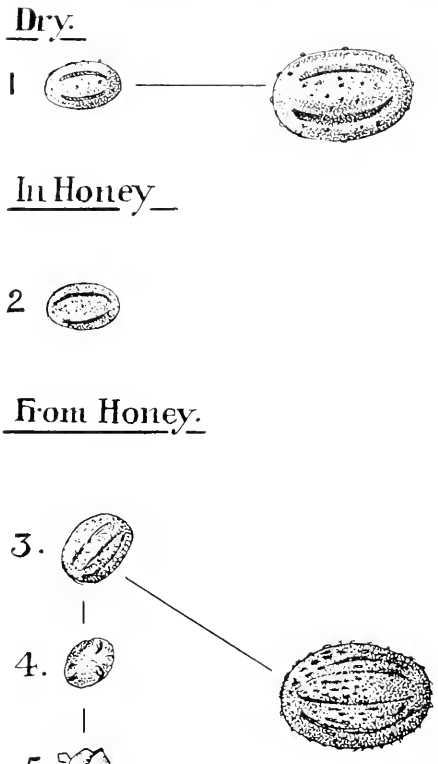
The plant is also very useful in other ways. It forms, when green, a nutritious food for cattle. It does not suffer from drought so soon as grass, and succeeds well on poor soil. The seed is a dark brown triangular one, about $\frac{1}{4}$in. long, and is a wholesome nutritious food. As food for human beings it is scarcely inferior to the cereal grasses, and has long been cultivated and used for that purpose, especially in Asia, its home. In Russia, the bread of the peasantry is made from the flour of this grain, and although it does not make very good-looking bread, it is palatable, and the buckwheat meal is wholesome in porridge and cakes.

Given to cattle, it fattens them rapidly;

while, as a substitute for oats, it answers well as food for horses. Poultry prefer it to any other grain, and all grain-eating birds are partial to it. In this country it is cultivated more for game and poultry than for any other purpose.

It is sometimes known as "Brank." Its generic name, *Polygonum*, is derived from two Greek words, *polys*, many, and *gonu*, a knee joint, from the numerous joints or knots in its formation. *Fagopyrum* is a Greek name given by modern botanists, owing to the resemblance of the form of the seed with that of the beech nut.

There are two of the eleven species wild in this country which are worthy



POLLEN OF BUCKWHEAT.

of notice. First, *P. convolvulus*, or climbing buckwheat, is a frequent weed in our cornfields, but produces seeds too small to be of any commercial value, although they possess the same good qualities as the cultivated, and they are eagerly sought after by the smaller wild birds. When amongst oats, the plants often grow to such an extent that they frequently impart their flavour to the meal, unless precautions are taken to remove the seeds previous to grinding.

Second, *P. dumetorum*, or copse buckwheat, which is thought to be a variety of the last, is found in hedges and thickets, more especially in the southern counties.

The flowers of *P. fagopyrum* are borne on the end of the erect branching stems—the plant growing about eighteen inches high—in an irregular panicle, and in colour are a pale pink or cream, having eight stamens, three free styles, and fine petals, the time of flowering being July or August. This is an annual, and, being a rather tender one, the seed should not be sown too early.

The pollen is of a deep yellow colour in mass and a dull yellow by transmitted light. I consider it a rather large grain for so small a flower; in its dry state it measures $\frac{2}{1000}$in. × $\frac{1\frac{1}{2}}{1000}$in. It has three rather shallow furrows extending for the greater part of its length, as shown at No. 1, and is covered with very short spines or pimples. When placed in honey it becomes *more* transparent, but is still very dense, its length also contracts slightly, as shown at No. 2, and measures about $\frac{1\frac{3}{4}}{1000}$in. x $\frac{1\frac{1}{2}}{1000}$in.

When taken from honey, the furrows, which are only very faint now, are doubled, and number six, but without processes have a rough, hairy appearance, and measure $\frac{2}{1000}$ x $\frac{1\frac{3}{4}}{1000}$ (see No. 3 with enlargement. They are also very much broken up in honey, and vary in size. Just a few also appear to have formed processes, as seen at No. 5. No. 4 is an end view of No. 3, whilst No. 6 is an empty pellicle frequently found in the honey derived from this source.

(*To be continued.*)

HONEY PRICES.

A correspondent sends us the following price list for English and foreign honey, issued by a firm of London merchants:—

NEW HONEY (SEASON, 1913).

Chilian.—Pile X, white, 7lb., 14lb. tins 8d.; 56lbs., 7d.; 2×50 tins, 56s. cwt. Pile 1, pale yellow, 7lb., 14lb. tins, 7d.; 28lbs., 6d.; kegs, 1¼cwt., 46s. cwt. Pile 2, pale yellow, 7lb., 14lb. tins, 6d.; 28lbs., 5d.; kegs, 19cwt., 42s. cwt.

Californian.—White, 7lb., 14lb. tins, 9d.; 56lb. tins, 70s. cwt.; 2 tins, 68s. cwt. Amber, 7lb., 14lb. tins, 8d.; 56lb. tins, 65s. cwt.; 2 tins, 63s. cwt.

English.—In fine condition, jars, 11d. lb.; 14lbs., 10d.; 56lbs., 9d. lb.

Jamaica.—White set, 7lb., 14lb. tins, 8d.; 28lb. tins, 7d.; 56lb. tins, 6d. lb.; 3cwt. casks, 52s. cwt. Pale amber, 7lb., 14lb. tins, 6½d.; 28lb. tins, 6d.; 56lb. tins, 5½d.; 3cwt. casks, 46s. cwt. Yellow, 7lb., 14lb. tins, 6d.; 28lb. tins, 5½d.; 56lb. tins, 5d.; 3cwt. casks, 44s. cwt.

HELPFUL HINTS FOR NOVICES.

By W. *Herrod.*

MANIPULATING A FRAME HIVE.

It is most important for the beginner in bee-keeping to commence in the right way with any of the many operations in connection with the bees, as it is very difficult to alter a habit when it is once formed. New pupils often apologise to me for their lack of knowledge when taking up bee-keeping; this is a good fault, as the right methods can be taught at once, whereas if they have a certain amount of knowledge and have practised wrong or cumbersome methods, the difficult process of eliminating the faults has to be undertaken, which means the waste of much valuable time.

Proper methods can be taught, but common sense is also necessary, and can only be applied by the operator. For instance, in the summer time it is quite safe to rear a comb outside the hive to obtain more room to manipulate, but if this is done in the early spring there is danger of either chilling the brood or of inducing robbing.

The points to remember are:—(*a*) Do not be continually manipulating the bees, as little interference compatible with good management is the right thing. If

FIG. 1.

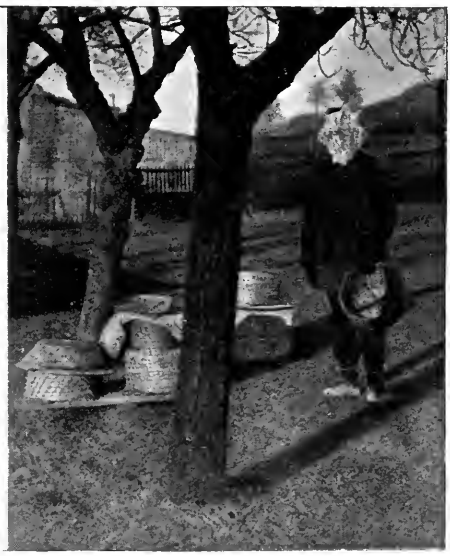


FIG. 2.

the novice wants to practise manipulation and has several stocks, then instead of spoiling all it is much better to set aside one lot to practise upon, so that if injury is done the loss is not so great. In learning to be efficient a certain amount of loss is sure to be incurred. (*b*) Before commencing operations have everything ready; for instance, don't have to leave the hive and go indoors for more fuel, matches, or fit up frames or supers when half-way through the manipulation. (*c*) Make up your mind what you desire to do with the stock before commencing; accomplish the work as quickly as possible, then shut down the hive at once. (*d*) Firmness combined with gentleness is the best means of avoiding stings. People who are very nervous and manipulate with jerky movements are almost sure to be stung.

Preparation.—A good veil is essential. This should be of light material of such a texture that the vision is impeded but little; black silk net is good, but has the disadvantage of being expensive and easily torn. White mosquito netting with a thin black silk net panel to come in front of the face is the best. White does not attract the heat; it is stout and not likely to be torn, and at the same time is inexpensive. It should have an elastic band run through a hem at the top to hold

it tight round the crown of a straw hat, having a wide brim to keep it clear from the face. An elastic band run through a hem at the bottom enables it to be drawn tightly under the collar at the back, while at the front it is fastened by means of a loop in the band to a button of the waistcoat. Fitted in this way there is no fear of bees creeping inside and causing a panic. Should a bee manage to get inside it is unwise to tear the veil off to liberate it while near the hive, as other bees may attack the face when exposed. Walk some distance away to get free from the flying bees before removing the veil. An odd bee inside the veil rarely stings, as its energy and attention is devoted to trying to get out. Bees always creep up-hill, therefore the best way to liberate one imprisoned in the veil is not by taking it off, but by drawing the top elastic band away from the hat, when it will creep out. Avoid veils of a green or any other colour than black to come in front of the face, as they affect the eyes and also have a tendency to turn one giddy. Wire veils are also a nuisance, they are cumbersome, soon rust, and, when working with the head down, press and bump on the back of the neck in a most uncomfortable manner. If two people are working together, the wire ends often get entangled in each other's veils.

Gloves should be avoided if possible, as they make the fingers clumsy, and they lose that deftness which is so necessary in manipulating. When for business reasons it is absolutely necessary to avoid getting swollen hands, gloves may be worn Avoid cotton ones, for these absorb the poison when they are stung; the smell of the poison remains and irritates the bees at future manipulations. Buckskin, or, better still, thin rubber gloves, are the best to use. With the latter it is necessary to rub the hands with French chalk to prevent them sticking and pulling off pieces of skin when removing them. Another good method of preventing bees from stinging is to immerse the hands in water, keeping them wet during the manipulation. The hands should be kept scrupulously clean and free from odour of any kind, such as perspiration or the smell which remains after handling a horse. It is advisable to remove the coat and roll up the shirt sleeves; if the coat is kept on, trouser clips should be used to fasten the sleeves tightly to the wrist to prevent bees ascending inside and stinging when by movement of the arms pressure of the clothes is put upon them. If by chance a bee does get inside, do not try to shake it down, but hold the arm up, when the bee will crawl up and out. It is best to wear a sweater, as it will fit tightly round both wrists and neck, so that the bees have no chance of getting inside. If trousers are worn, then the bottoms should be fastened with clips; it is much more comfortable to use knickers. An ideal bee dress for a man is seen at Fig. 1. The old-fashioned method of using a pair of stockings on each hand and swathing the head in a close pattern material, in which it was difficult to breathe and almost impossible to see through, with the coat buttoned up, made a very uncomfortable outfit (Fig. 2). The ideal dress for women bee-keepers is that shown in Fig. 3, which consists of wide brimmed hat for the veil, short skirt and knickers, with an elastic band round the bottoms to fit tightly to the leg. Long skirts are an abomination, as they blow about in the wind and irritate the bees. There is also the danger of the operator being tripped up

FIG. 3.

by treading upon the skirt when doing work which necessitates stooping. A sweater and leather leggings to prevent the bees stinging the legs completes the outfit. The veil for a woman is more comfortable if sufficient length is allowed in the bottom elastic band to pass the arms through, so that it comes under the armpit as well as being pinned down at the front.

After a little experience it will not be necessary to always have the veil down over the face, the temper of bees can be judged by the tone of their hum. When good tempered the veil can be lifted up so that the work is carried out with greater comfort, but it should be kept on the hat ready for pulling down at a moment's notice.

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

BLURTS FROM A SCRATCHY PEN.

"MY RELATIONS WITH DARWIN."

(Henry Fabre).

[8901] I do not think any review of this very interesting contribution to the pages of the *Fortnightly Review* has appeared in your columns. Although little, or perhaps even nothing, has been added to knowledge, yet the subject is one in which there are great possibilities could we only ascertain the laws which govern the migration of birds, and sometimes even of insects, or could we know how it is that the swallow finds its way unerringly across the ocean, how the salmon, from the depths of the sea, finds its way upwards into the shallows of our rivers. We are told it is instinct, a power within them which compels them, whether they will or no. Scarcity of food, and the necessity of promulgating their species, are potent factors, but the greater mystery still remains. How is it done without chart or compass? Could we, I repeat, discover this motive power, what might there be attached to it. But I must not stay now to consider this, I must hasten on to that which drew Darwin and Henri Fabre into such close relation. It was the homing flight of insects.

It appears, then, that our great English scientist had been attracted by observations made by Fabre as to the faculty mason bees have of finding their way back to their nests, even from a distance of two miles. Darwin had contemplated studying the flight of pigeons and investigating thereon, but a crowd of other interests, as we can readily imagine, had prevented him. It was natural, therefore, that when he found a kindred soul was so interested, and so well versed in a similar pursuit, that he should suggest that Fabre should report any intelligence to him, and he also suggested certain experiments, substituting the insect for the bird, for he maintained probably the same laws which govern the one would apply to the other.

The nests of these mason bees we gather, as we read the essay, might rather be styled edifices. Let us hear Fabre's description: "I had the curiosity to weigh the largest: the steelyard marked 35lbs.—the roof was covered over an extent of seventy tiles, each rectangular block of nest lying on the convex surface of a tile—to take an average—we find the total weight to amount to three-quarters of a ton," and in another place "allow the work to accumulate, and one fine day the roof will break down under the added burden. Let the nests grow old, let them fall to pieces, and you will have chunks tumbling on your head big enough to crack your skull." I wonder if we have anything like this in England! I don't think I have yet seen them.

The trial Darwin proposed that M. Fabre should make was "to carry the insects in paper cornets a hundred yards in the opposite direction to that in which you meant to let them fly, but before turning round to retrace your steps, put them in a circular box, which whizz round in every direction; by that means they would be sufficiently bamboozled as to their locality." A "cornet," let me explain, is a funnel-shaped bag which one sees grocers and tobacconists screw up for their wares. M. Fabre has a gardener and factotum "Favier," who encourages him to try this, and tells him, as also do other neighbours, "that when people want to move a tom-cat from one farm to another at some distance they place him in a bag, which they whirl round rapidly when starting." Pleasant for Mr. Thomas Cat. We have an English expression, "a place not large enough to swing a cat round." Is this the origin? The tale of the cat gives the two great naturalists confidence and they are firm in essaying the adventure.

But at the onset a difficulty is met with, as M. Fabre writes: "These nests come from the nearest house, separated from

mine by a little field of corn and olive trees. I had reason to fear that the insects might be under the influence of their ancestors, who had lived in the shed for many a long year." So Favier is commissioned to get other bees. He procures four tiles. "A wheel-barrow is proposed to move the blocks of cells, but that is too rough, a basket is deemed safer. It was all that two men could carry between them, and even then I had to stand treat on their arrival: they were utterly exhausted." An illness and a cure, known in other countries besides France. However, Fabre gets them home and hangs them in a wide arch under a terrace. "We fasten a stout hook to each tile and hang it on the wall on a level with the eyes." They are taken by "the neighbours for a display of smoked provisions or gammons of bacon."

"They are in full swing by the end of April. It is time to think of the experimenting. To know them they must be marked. A solution of gum arabic, thickened with a red, blue, or other colouring powder will answer. When the bee buries her abdomen in the cell or when she is building, she is so engrossed with her work that it is easy without alarming her to mark the upper thorax by means of a straw dipped in the coloured glue. She flies off, returns again, the marking is repeated until quite dry. To catch the insect a test tube is placed over her and she is transferred to the 'cornet.'"

Fabre continues: "On the 2nd May, 1880, I make a white mark on the thorax of ten mason bees, busied with various works. I carry them a quarter of a mile in the direction opposite to that which I intend to take; a path skirting my house favours. There is a roadside cross at the end, here I swing my bees in every direction, while I am pironetting on my heels. The gyrations are accomplished. I retrace my steps westward of Serignan. When halfway I repeat the rotation, and for the third time at the spot chosen for release. The distance (from home) is, roughly speaking, about two miles. I let them loose at a quarter past two. A quarter of an hour later my daughter sees the first arrive; on my return two others come back; three out of ten." The experiment is repeated next day, also on the 4th and 14th May, numbers of bees varying, but results the same. In 1881, again, he repeats the same experiments, but this time, to increase the difficulty, they are released in the middle of a wood, also he takes them a wandering journey of five miles before letting them go, but his labours are in vain. They are home even as soon as he is.

Both Darwin and Fabre were disappointed. They had felt certainty would be the result. "The problem called for another method, and another method was suggested," which, abbreviated, reads: "Make a very thin needle into a magnet, and affix a very small piece of it in close proximity to the nervous system of the insect." Using cere-cloth it was so affixed and the result was astounding. "The moment the bee is free she drops and rolls like a mad thing on the floor of the room, resumes her flight, flops down again, turns over on her side, on her back, flings herself about desperately and ends by darting through the open window." He seeks her in the nest, and finds her "rid of her magnetic tackle."

Thinking these contortions might have been the result of the needle, Fabre fastens a very small piece of straw in the same position as that occupied by the needle. But the straw causes the same vagaries as the magnet. In other words, magnetism has nothing to do with it. What has happened? "In both cases, it is the cumbrous gear whereof the insect endeavours to relieve itself by every possible means. To look to it for normal actions, so long as it carries an apparatus on its back, whether magnetised or not, is like trying to study the natural habits of a dog which we have just driven crazy by tying a kettle to its tail."

One sympathises with the failure. Even if some scrap of information unknown before had been the result it would have been encouraging. But there was nothing to record. Yet let us hope that some other genius may have the courage and patience to try again, unless, indeed, it is one of those mysteries which the limit of man's mind cannot unravel, and before which we must bow, and simply confess "We know not."—J. M. Smallwood.

JUDGING HONEY.

[8902] As this subject is being thrashed out in the "B.B.J." at present, perhaps the following point may interest others as well as myself. It was raised by a well known and very successful exhibitor, while he and I were driving home after attending Mr. Herrod's lecture in Alnwick. After discussing many bee topics, we got on to the question of judging honey. We both heartily agreed that the old system that obtains in these parts, of appointing the first man available, the only qualification being that he has kept bees for a number of years, to act as judge is quite wrong. We agreed that tasting (seldom, if ever, done at small shows) was a necessity, and that density should be properly tested, and not merely be by the obsolete method of inverting the bottle, and on many other points, and then he suddenly propounded the follow-

ing, which he says has puzzled him for many years.

His contention is this: To obtain ripe honey, and the requisite density for extracting and showing in bottles, one leaves the honey on the hive as long as possible. The combs that have been on longest are naturally the most travel-stained, and presumably the ripest and best. As the cappings are cut off this travel-stain is immaterial. Why should a judge refuse to look at a section that is travel-stained? It ought to be richer and riper than one freshly sealed; therefore, why is it ignored *absolutely* if flavour comes first in the estimation of all good judges? He maintains that some of his ripest and best sections, under existing methods of judging, are unshowable. Is he right?

If some of our best judges would kindly give their views on this point, which I have never before seen raised, it would be both interesting and instructive to all bee-keepers. I for one should greatly value the opinions of Mr. T. W. Cowan, Mr. W. F. Reid, Mr. E. Walker, "D. M. M.," Mr. A. G. Pugh, Mr. W. Herrod, and Mr. G. Hayes.

With kindly greeting for Christmas and good wishes for the New Year to all bee-keepers.—F. Sitwell.

BEE FEEDERS.

[8903] Regarding bee feeders, slow or otherwise, I may say that I am using same wooden feeders that have been in use sixteen years, and they answer now as well or better than when first made. They are, of course, oblong—some 9in long and 4in. wide, holding about 2½lbs. of syrup. These I use for feeding driven bees; others, for nucleus lots, hold about ½lb. The feeders have a bee-way provided underneath and another up through a block in the middle. Thin pieces of board ½in. apart are arranged in one part of the inside, the other part being partitioned off with a perforated zinc divider and a glass slide on top reaching up to the space for filling. Thus no bees ever get drowned or escape. The syrup does not affect the zinc in any way—at least, it has not done so in sixteen years. It is quite easy to fold the quilts to fit these feeders when placed, as they should be, over the ends of frames. But where is the practical utility of so-called slow feeding? I can understand stimulative feeding in spring and autumn and rapid feeding for very late lots of driven bees, though I question if with rapid feeding—say, after September 20th—the bees properly seal over the syrup. For that reason I do not care for driven bees later than mid-August. Then, if they have been hived on empty combs, they will well seal over the food by mid-September and can be trusted to winter well. In this part—North Bucks (borders of Beds.)—the season has been very erratic, with only two odd days when the bees could work all day. Many days when lime and clover were well in bloom not a bee was out. My best "take" was barely 40lbs., with an average of just over 30lbs., including sections. Several stocks gave no surplus. The honey is of good quality and remarkably dense.—A. Harris, Wavendon, Bucks.

SKEPS OR FRAME-HIVES.

[8904] Regarding the skep controversy (page 416, "B.B.J.," Oct. 16), I should like to assure Mr. Crawshaw that I at least perfectly understand his position, and although he claims to be fair, he fails to notice that although ignorant I managed to achieve some success with my second venture into bee-keeping with a frame-hive. Of course, I merely gave examples, and nothing personal was meant; perhaps I was enthusiastic, and I am glad to say this increases with age. I should like to draw Mr. Crawshaw's attention to the significant initials in the preceding paragraph in his article, and all the latter means to the thinking bee-keeper, which is really the cause of the controversy, hence the (in his opinion) hardness on the "Skep Antiquarian." I will here refer him to page 301, August 1st, 1912, where he can read in the draft of the proposed Bee Diseases Bill," "destruction should occur where disease is, or has been, present." There is nothing there about banning the skep, but I have endeavoured to show there is no legitimate excuse for retaining it. Is not the best "insurance" prevention, and is not this most easily accomplished with movable combs? I would rather see skeps of bees than no bees in a garden, but, as everybody knows, bee-keepers vary. This being so, there is all the more need for definite action. I think, again, the "illiterate" bee-keeper will shortly disappear, and there is a vast difference between the "old let alone skeppist" and the new, indifferent lazy one, intellectually, if not in theory. Consequently, the time has come when, in the interest of bee-keeping, skeps must go, as sentiment must not stand in the way of progress. This discussion has not "drawn" many skep friends out, has it? Probably they will not read, but when we have educated skeppists advocating 12lbs. (page 387) of stores, estimated, I expect, by just lifting stand and all and including, say, one-fifth pollen, I think the time

has come to protest. I will go further now, and say I think that where such cruel neglect is known it should be punished in the same way as if the culprit had starved a dog or a cat.—A. H. Hamshar (October 20th).

IS SPRING DWINDLING FATAL?

[8905] A very able summary of the Government enquiry into "Isle of Wight" disease can be had free of charge on application by unstamped post-card to the Board of Agriculture, 4, Whitehall Place, S.W. It is Leaflet No. 253.

Now here is a chain of argument that may almost revolutionise our attitude towards some of the minor bee complaints. It is as certain as anything in science that *Nosema apis* is the cause of "Isle of Wight" disease. Who is *Nosema apis*? He is the protozoon identified by Dr. Zander with malignant dysentery (see "Guide Book," p. 184). Malignant dysentery (see *ibid.*) is infectious, and has destroyed thousands of colonies every year. *Every colony attacked is doomed.* That is also said of "Isle of Wight" disease, and the more I hear of it the more true it seems. But now read this from Leaflet 253: "The names of Maypest, Bee Paralysis, and Dysentery are probably often applied to the less virulent forms of the ('Isle of Wight') disease." And again: "In its most benign form it develops slowly and kills very few bees, while the colony is often replenished by the young bees that emerge from the brood. In this form it is popularly known as spring dwindling."

I won't ask what sort of a thing is a milder form or the most benign form of an always fatal disease. It is quite enough to make the proposition that a mild form of an infectious disease is more dangerous than a virulent one. You may thoroughly burn out an undoubted "Isle of Wight" case and save the apiary, but if your spring dwindlers are some of them parasite carriers, you may be dooming the apiary by cossetting a dwindling stock. However, I do not suggest that we should all run "microspor" mad and destroy every stock that produces a dead bee. I ask my fellow bee-keepers the question: Are spring dwindlers worth saving? or, in order to wake them up more thoroughly, Is spring dwindling fatal?

Hundreds will laugh at the question and will say, "I had a stock that spring-dwindled down to two frames and increased again by the end of June, and filled three racks of sections." But that may not be the complete answer. I had a stock with "Isle of Wight" disease which had dwindled to two hundred bees. It built up again late in the summer and stored 60lbs. in the brood-nest. If winter had come at its right time I should have added: It went into winter quarters completely cured and as sound as a bell, and next spring I should have noted the fact, though perhaps not published it, that it had died out owing to queenlessness, or lack of a passage-way over the frames. The Cambridge report very aptly says that many of these cases of quiet winter death result from unsuspected "Isle of Wight" disease.

So, when I ask my fellow bee-keepers, Is spring dwindling fatal? I ask them to go through their books from year to year and note what happened during the summer and winter and next summer to stocks that recovered from this "benignant" ailment. If the Editors would consent to make a collection of records on these lines I imagine that it would be of great interest. I don't suppose that all the stocks that dwindle fail to live through the twelvemonth, any more than that all dwindling is caused by *Nosema apis*. But I am prepared to be surprised if it is shown that, on the law of averages, it pays to keep dwindlers. Someone says in the "A.B.C. of Bee Culture" that it does not pay to unite them, and that in a few days the double stock is as weak as either single one was. Certainly, it would be risky to unite such a weakling to a healthy stock. Does our experience coincide with the American?—G. G. Desmond, Sheepscombe, Gloucestershire.

A DERBYSHIRE REPORT.

[8906] I thought you would be interested to have a report from this part of Derbyshire. I commenced the season with five stocks, which went along well and looked like giving a very good account of themselves up to the end of June. Then the weather became dull and cold and remained so right through July. On several days in July I was in the garden at mid-day, and only saw odd bees flying. Stocks had less honey stored in the middle of the month than at the end of the third week in June. I took 140lbs. of extracted honey, and increased stocks to eight, which I consider very fair, as this is a poor district, and the bees have all to be fed for winter.—A. H. Hanson, Ilkeston.

Queries and Replies.

[8890] *Comb Honey Granulating.*—Will you kindly inform me through your paper why honey in the comb became so quickly candied this year? Last year I put it away in airtight tins, and it kept as nice as possible until the spring, and I should like to know what is the reason why it did not keep this year the same?—K. P., Marlborough, Wilts.

Reply.—The probable cause is that this year there is a quantity of charlock honey in the sections, and this granulates very quickly.

[8891] *Brood in November.*—I notice in your reply to a correspondent (8888) in the "B.B.J." of November 27th, you say there is no brood at this time of the year, but I have a skep that has brood in it, and I thought perhaps you would like to know. When my bees were out last Saturday (November 29th), I gave them a cake of candy, putting it between the combs, and in doing so I must have damaged the combs which had brood in them, because the bees brought some larvæ outside. This stock did not swarm this season.—H. G. Allaway, Maidenhead.

Reply.—Yours is a case which is the exception and not the rule. It is quite possible occasionally to find brood later and earlier than the average time given in our literature.

[8892] *Late Drones.*—Herewith I send you a queen I took from one of my stocks. When giving a final overhaul I discovered some dozens of drones in this one, which the workers were elbowing out as fast as they could; this led me to hunt up the queen, and she looks to me to be unmated by her slender appearance, and also by the fact that when examining her she took wing and flew all round me before I captured her again. This I have never seen a mated queen do, unless she was let fall or otherwise was roughly handled. Can you decide the point? I showed her to an expert, and his opinion was the same as my own. I may say this queen is from one of the stocks I had at the heather; from four stocks I had a hundredweight of heather honey, and all sold at 13s. per dozen. But at the clover season we got not one single drop—complete failure this year. Thanking you in anticipation.—J. Wallace, Bramhall, Cheshire.

Reply.—The queen is a virgin.

WEATHER REPORT.

Westbourne, Sussex.

November, 1913.

Rainfall, 3·42 in.	Minimum on grass, 22 on 23rd.
Above average, ·10 in.	Frosty nights, 2.
Heaviest fall, ·61 on 12th.	Mean maximum, 53·5.
Rain fell on 21 days.	Mean minimum, 37·6.
Sunshine, 62·1 hrs.	Mean temperature, 45·5.
Below aver., 4·3 hrs.	Above average, 2·5.
Brightest day, 22nd, 5·3 hrs.	Maximum barometer, 30·448 on 28th.
Sunless days, 3.	Minimum barometer, 29·190 on 13th.
Maximum temperature, 58 on 2nd.	
Minimum temperature, 31 on 23rd.	

L. B. Birkett

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

W. A. C. (Som.).—*Making Candy.*—The carbonate of soda which you inadvertently put into the candy, instead of cream of tartar, will not injure the bees.

Novice (Yorks).—*Best Material for Quilts.*—We do not advise using American cloth for quilts over frames. The best material is calico, with a warm packing above this.

B. B. T. (Surrey).—*The Honey Season.*—(1) We should say that the season was very good on the whole. In the North good returns are reported from nearly all heather districts (2) No sensible bee-keeper would economise in foundation. It would be "Penny wise and pound foolish" to do as you suggest.

Despair.—*Isle of Wight Disease.*—We do not ourselves *advocate* any of the "cures." We allow readers to give their experiences and express their opinions freely in our columns, but we are not responsible for their statements.

Honey Samples.

A. C. (Darwen).—The honey is of fairly good flavour and colour, from mixed sources. Density poor. Should sell at 8d. or 9d. per lb. jar retail.

Axel (Cheshire).—A very nice flavoured honey, mainly from clover.

IMPORTANT NOTICE.

Owing to the increased work of our staff in other directions, and also on account of so many subscriptions remaining unpaid, we are unable to undertake the extra work and expense involved in sending out bills for small accounts, or yet bear the loss of these unpaid sums. We therefore respectfully notify our subscribers that the "Journal" will not be sent unless the subscription is prepaid.

New Volume commences January 1st.

Editorial, Notices, &c.

WORCESTERSHIRE B.K.A.

The seventh annual show of the Bromsgrove and District Gardeners' Association and Horticultural Society was held in the Assembly Rooms, Bromsgrove, on November 21st and 22nd. A honey and bee products' competition was included in the schedule, and drew no fewer than 225 entries from all parts of the country, including the well-known names of Messrs. Dyer, Patchett, Pearman, and Pugh. The competition was very keen all round, and seldom is such a grand collection of exhibits seen out of London. Over 1000lbs. weight of honey was staged. The best sections in one class were disqualified for over-lacing. The exhibits not for competition sent by Mrs. Howard Lloyd, Grafton Manor, and Mrs. Smith, Elm Court, added greatly to the attraction of the show. Unfortunately, owing to lack of space, the exhibits could not be staged to advantage. Mr. E. A. Millward, lecturer and expert to the Worcestershire B.K.A., acted as judge, and made the following awards:—

OPEN CLASSES.

Display of Bee Products.—1st, A. E. Woodruff, Stoke Prior; 2nd, Geo. Richings, Worcester.

One 1-*lb. Jar Liquid Honey.*—1st, W. Patchett, Caistor; 2nd, T. A. Denison, Rugby; 3rd, A. C. Jackson, Thetford.

Six 1-*lb. Sections.*—1st, A. E. Woodduff; 2nd, C. W. Dyer, Newbery; 3rd, Geo. Richings.

Six 1-*lb. Jars Liquid Honey.*—1st, A. H. Bowen, Cheltenham; 2nd, J. Price, Old Hill, Staffs.; 3rd, J. Pearman, Derby.

Six 1-*lb. Jars of Granulated Honey.*—1st, J. Evans, Sutton Coldfield; 2nd, A. H. Bowen; 3rd, W. Patchett.

Six 1-*lb. Jars of Light-coloured Liquid Honey.*—1st, S. Sanderson, Cambridge; 2nd, J. Pearman; 3rd, W. Patchett.

Six 1-*lb. Jars of Medium or Dark-coloured Liquid Honey.*—1st, A. Hulse, Knutsford; 2nd, W. Shuker, Bridgnorth; 3rd, J. Pearman.

Three 1-*lb. Sections.*—1st, T. A. Denison; 2nd, W. H. Allard, Rugby; 3rd, Mrs. Lower, Beaulieu, Hants.

Three 1-*lb. Jars Liquid Honey.*—1st, W. H. Allard; 2nd, T. A. Denison; 3rd, A. C. Jackson.

Beeswax.—1st, G. Richings; 2nd, W. Shuker; 3rd, A. Moore, Bromsgrove.

Honey Cake.—1st, Mrs. Woodruff; 2nd, Mrs. Leedham, Lower Bentley; 3rd, Mrs. A. J. Neale Rednal.

Bee Candy.—1st, A. H. Bowen; 2nd, Geo. Richings; 3rd, T. A. Denison.

Beeswax. 1st, W. Patchett; 2nd, Geo. Richings; 3rd, A. E. Woodruff.

Honey Sweetmeat.—1st, A. E. Woodruff; 2nd, Miss Woodward; 3rd, J. Pearman.

Honeyed Fruit Jelly.—1st, Mrs. Woodruff; 2nd, J. Carter.

MEMBERS' CLASSES.

Three 1-*lb. Sections.*—1st (silver medal), Mrs. K. E. Smith-Wychbold; 2nd (bronze medal), A. Woodruff; 3rd, Howard Lloyd, Grafton Manor.

Three 1-*lb. Jars Liquid Honey.*—1st (silver medal), A. Moore; 2nd (bronze medal), A. E. Woodruff; 3rd, Mrs. K. E. Smith.

The special prize, presented by Francis Russon, Esq., Bromsgrove, was awarded to A. E. Woodruff for gaining the highest number of points.—PERCY LEIGH, Local Secretary and Expert, Worcestershire B.K.A.

REVIEWS OF FOREIGN BEE JOURNALS.

By "Nemo."

Bacteriological Course on Bee Diseases.—We learn from Herr Schreiber in the *Münchener Bienen Zeitung* that a course of instruction on Bacteriology, especially in connection with bee diseases, was held at the Imperial Bacteriological Institute, Dahlem, from the 18th to 31st August last. It was well attended, and the lectures were given in a large hall, each student being provided with a microscope and all other appliances necessary for examination and research. The lectures were given by Professor Dr. Maassen, and the practical work was superintended by his assistant, Dr. Ladewig.

On entering the hall, the first object to arrest the attention was a large sheet, on which were represented large scale diagrams of the various phases of different diseases. On the first day colonies of bees were manipulated and examined as a preliminary to the introduction to diseases, and the special characteristics of these were pointed out. The bacteria causing these diseases were then shown in hanging drops of pure cultures. There was great delight when students found the rods and spores. Great care had to be taken in examining, for on the slightest pressure of the objective on the glass the preparation was destroyed. Accidents did happen, and other drops had to be prepared for observation. Every student looked through his microscope, and had to make a drawing of what he saw. In this way time flew almost too rapidly, but each got a good idea of the various organisms which he examined. On the following days the

students were advanced to more difficult work in connection with the making of the preparations. Innoculations were made, and pure cultures obtained. The work was not very simple, and it was much more trouble to get properly stained smears of the alimentary canal, but perseverance and constant practice enabled the student to become expert in this work. Frequently a spoiled preparation had to be put aside, and there was great joy when one turned out well. The different microbes obtained from the diseased larvæ or bees were then prepared and mounted. Lastly, the bacteria connected with odourless foul brood were examined and compared, and much interest was shown in special staining with the object of finding the flagellæ, and in many of the preparations they were not observed. The work during these days in Berlin was arduous but most instructive, and everyone was thankful that he had had the opportunity to so thoroughly study and practically learn all about these bee diseases. Herr Schreiber speaks highly of Dr. Maassen and Dr. Ladewig, who were indefatigable in their attention and assistance.

Bee-keeping in China.—There is a report in *Die Biene und ihre Zucht* by two bee-keepers in Canton on the state of bee-keeping in China. The management is very simple, and as a consequence the results are poor. The bees are kept in skeps hung on the sides of the house, right up to the roof. A bamboo mat protects the hives from the sun. They have as many as seventy skeps thus hung, each of which yields, according to the season, from 6lb. to 10lb. of honey. The bees are easily increased by their swarming freely, the swarms being collected in skeps, which are hung on to the walls. The combs filled with honey are simply broken out, the honey having a strong disagreeable aroma, and is sometimes unfit for consumption owing to poisonous nectar having been collected from certain flowers. A swarm with skep costs from 1s. 8d. to 2s. 3d. Many Chinese have hundreds of hives, simply for the purpose of producing wax, of which China exports a large quantity to Europe, the amount in 1910 being 150,000 kilos.

How Bees Defend Themselves.—Mr. E. Ledoux describes in *L'Apiculture Nouvelle* how his bees, when attacked by the death's-head moth, defend themselves. It is well known that in some countries this moth is very troublesome, and makes a desperate effort to enter the hives, frightening and paralysing the bees by its cries, which frequently enable it to accomplish its object and rob the colony of its honey. The entrance being high enough for the moth to gain admittance, the bees set to work and build a wall of propolis, leaving openings sufficiently large for single bees to pass in and out. M. Ledoux remarks that this shows a certain amount of intelligence. How did the idea originate with the bees to co-operate in defending themselves in such a manner, as it cannot be instinctive, such, for instance, as building comb or ventilating a hive? It was necessary to think out and co-ordinate these works, and one cannot consider this as purely instinct. The death's-head moths were very numerous this year, and M. Ledoux found other hives in his apiary with similar defences, the barriers differing slightly in construction. Several dead moths on the alighting board showed that outside also the bees had been on guard.

M. Ledoux also relates that on one occasion he was able to observe how the bees expelled a cockchafer. He noticed one evening one of these beetles settle on a neighbouring branch, and he placed it for experiment on the alighting board of the nearest hive. The beetle promptly entered the hive, but was not very long inside, for in less than a minute the colony became very excited, and he saw the poor cockchafer trying to escape, accompanied by about a hundred bees, which hung on to the legs, antennæ, wings, or wherever they could lay hold of their enemy, who only got rid of them by rolling off the alighting board on to the ground.

DEATH OF MR. C. N. WHITE.

We much regret to have to record the death of Mr. C. N. White, which occurred suddenly at his residence, at St. Neots, on November 18th last. Mr. White was born at Market Rasen, Lincolnshire, on November 16th, 1855, and was trained for the teaching profession at Carnarvon College. He married, in 1878, Miss Selvage, of Hainton, Lincs. After holding the post of schoolmaster at Tealby, Lincs., for two years, he went to occupy a similar position at Somersham, Hunts., where he remained for eighteen years, until the end of 1897, when he became Master of St. Neots Union House. So highly appreciated was he at Somersham that in 1895 the inhabitants presented him with a handsome gold watch and a testimonial "in recognition of his valuable services to Somersham and neighbourhood," and on his departure they gave him a purse of money and another testimonial.

Mr. White was a man of great ability, activity, and straightforwardness of purpose. Into whatever movement he entered he threw himself heart and soul, and his interests were so varied, and extended in so many directions, that he became well

known over a wide district, and made many friends in all classes of society. And an excellent friend he was; he never missed an opportunity of rendering help, even at great trouble and expense to himself, and his advice could always be relied on as thoroughly sound. Method and promptness characterised all his transactions, and the many institutions for which he worked always found their affairs in admirable order. As long ago as 1875 he was an efficient member of the Volunteer Force, and his patriotic interest in its work never declined. He was Quartermaster of the Hunts. Volunteers from the time they were formed, in 1900, until they were amalgamated with the Beds. Volunteers under the Territorial Act of 1908. On the retirement of his superior officer in 1910, Captain White assumed the duties for the whole of the 5th Battalion Bedfordshire Regiment, and had he lived he would probably have been Major. He was a prominent Freemason for many years, and had held office on several occasions in connection with his lodge. It was in connection with bee-keeping, however, that Mr. White was known to our readers. He was a member of the B.B.K.A. for many years, and attended the conversazione in October last, when he mentioned his pleasure at meeting some old friends and making new ones among the bee-keepers there. He was recognised as one of the leading writers on bees, and contributed articles to several papers, writing under the *nom de plume* of "Ivo." He was also the author of a book on bees. He was active in founding both the Cambs. and the Hunts. Bee-keepers' Associations, and acted as Hon. Secretary of each—for Cambs. ten years and for Hunts. twenty-one years—until his increasing duties forced him to give up the work.

Mr. White leaves a widow and three sons to mourn the loss of a most devoted husband and father; the sincere sympathy of all will be with them in their great bereavement.

THE LATE MR. C. N. WHITE.

AMONG THE BEES.

By D. M. Macdonald, Banff.

WHERE TO REAR QUEENS.

Bees themselves will rear queens under at least three different sets of circumstances: when preparing to swarm and fulfil the great ediet "to multiply and replenish the earth"; when the workers perceive that the mother bee is failing in prolificness, and they fear extinction from the paucity of eggs being oviposited;

when through accident or the set designs of man the queen regnant gets killed. Man, following Nature's laws, can step in and bring about such a set of circumstances as will make bees determine to raise queen cells as surely as if their queen had been deposed and they were helplessly queenless.

One of the leading rules in queen rearing is to breed from a strong colony and *in* a strong colony. But bee-keepers do not desire, and indeed cannot afford, to utilise their strong colonies for rearing queens alone, hence they have to invent new devices; and the very first and basic principle here is to breed in a strong colony, but in an extra department, leaving the true brood body for the breeding queen to lay in without any break or hindrance. To do so effectively she, of course, must be confined to the lower set of frames by queen-excluder zinc, while in the upper body the process of queen cell construction can go on without in any way either disturbing or affecting her ovipositing or confusing the bees.

In my early novitiate days I remember several Americans, acting independently, discovered that this could be done with perfect safety in upper chambers, and Mr. G. M. Doolittle, in his work on "Queen Rearing," first published over a quarter of a century ago, described the whole process. Yet the other day I observed one, who presumably considers himself an advanced bee-keeper, questioning if this can be done, and declaring that excluder here is really no separation at all, and that it is news to him that this system will raise queens! Mr. Doolittle seems at first to have stumbled on this plan, but he tested it and proved its success a fact—"I could rear the best of queens just when and just where I wanted them, and that, too, with a laying queen in the hive at all times, so that there would be no loss of surplus while rearing queens." He tells us there is scarcely any limit to what can be accomplished by this method, giving as an example: "I had a laying queen below, queen cells in all stages of progress above, those just hatched and queens kept in nurseries in the upper story." This may be "news" to some, but I can tell them that queens can be reared, and have been reared for over twenty years in this locality, in upper stories at times even without the use of a queen excluder. But lest there might be any doubting Didymus I will quote another authority, that of the Nestor of Bee-keeping, that "young, old boy of ninety," Dr. Miller: "Nor is it quite necessary to have an excluder between the stories. In lieu thereof I have used a cloth with room for passage at the corners. Neither excluder nor cloth is absolutely necessary—*distance is enough.*" I really wish my critics would find fault according to knowledge, and not according to lack of it!

While the above holds good, and I would prefer the plan under most circumstances to any other method, the hives used in general in this country, at least those where comb honey is worked for, do not lend themselves well to top-story queen rearing. Therefore I agree with Mr. Sladen when he says that "while admitting the above method is now considered by the majority of queen breeders to be the most satisfactory for general use," yet, for many in this country, again quoting this high authority, "the brood chamber is preferable"—worked in the way he describes in his book on "Queen Rearing." As the whole process is fully described and illustrated in both his small and large books, while the gist of it is to be found in the Guide Book, I need not here enter into particulars. I can confidently recommend the latest edition (see advertisements, page v., "B.B.J.") as one well worth purchasing, and it is my opinion every bee-keeper in our islands who means to rear even a few queens should possess a copy.

Skeps.—The sentiment which induces the championing of the poor is a good one. One does not desire to trample on a man who is down. Perhaps it is to some such feeling the skep is at present indebted for producing the various champions, who have sung its praises within recent weeks or months. They are a motley crew! Men of eminence in the profession, first-class experts, old men who were well known in the craft over forty years ago, men who never tested frame hives, others who use only such homes for their bees, men possessed of a cross-bench mind who delight in crying up what others decry, and men perhaps who want to be singular. But as a rule they tilt at windmills! They write as if those who advocate the use of only frame hives look on the skep as an unmixed evil, and as if with no redeeming features. They set up this chimera to knock it down again, oblivious of the fact that their labour is a vain one. I look on the matter in this way. Our forefathers long ago cut their corn with hooks, then they advanced to scythes, later came the more expeditious reaper, now modern advance demands the binder. In ancient times our ancestors dug the ground laboriously with a wooden spade, as time advanced iron was substituted for the softer material in the digging part, later generations invented and used rough ploughs, then advancing to more perfect ones, now our farmers turn over two or three furrows at a time with their improved implements, and

many are not content without steam or motor driven ploughs. Are not these examples on lines parallel with improvements on the "Homes of the Bees"? First we read of the oft-quoted Virgil's "hollow oak," then came wicker cases, daubed with clay and slime, afterwards we had the dome-shaped hive, gradually blending into the "improved" flat-top hive, then, latest and best, came the modern frame-hive. In my view it would be as absurd to go back to the ruder implements of husbandry enumerated above if we were starting farming, as it would be for any modern apiarist who has begun with frame hives to have any dealings with that sealed book the straw skep, even in its most improved form. Praising them or commending to beginners these antiquated remnants of bygone times in our day is the very superfluity of naughtiness. It looks to me like trying to set the hands of time back a half or at least a quarter of a century.

I am fond of quoting authorities when dealing with a certain class of critics. The author of the latest edition of a book published on bees says: "Movable combs are *absolutely necessary* to the intelligent management of bees." Another, in whom many "skep" men believe firmly, says: "The hive (skep) was until comparatively recent times a sealed book, the movable comb hive is"—well, in a summary, possessed of all the virtues!

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of November, 1913, was £4,443.—From a return furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs.

W. BROUGHTON-CARR MEMORIAL FUND.

The following donations have been received:—

	£	s.	d.
A. H. E. W.	5	0	0
H. Jonas	2	0	0
Mr. and Mrs. Pearman (third donation)	0	10	0
J. Gibson	0	6	0
J. G. Street	0	5	0
J. Ashford	0	2	6
	£8	3	6

SPECIAL LECTURE.

Mr. W. Herrod will give a lecture in connection with the Development Fund for the South Staffordshire Association on December 22nd, Technical Schools, Stafford Street, Dudley, commencing at 7.30. The subject will be "A Year's Work in the Apiary."

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

JUDGING SECTIONS.

[8907] In reply to Captain F. Sitwell's letter (8902) in your issue of the 11th inst., in which he invites my opinion on the point of judging sections, I may say that at some shows where (under protest) I have judged, I have not been allowed to open sections to taste their flavour and test their consistency. I contend that these points should be taken into consideration, because in some cases the difference is too marked to ignore. I consider, however, the points given for sealing and general appearance should come slightly in front of those for flavour and consistency; so a travel-stained section would require to have an exceptionally better quality honey to take its place before a well-filled clean *white sealed* sample of *pure honey*.

Comb honey, especially to the lay mind, is an altogether different article to extracted honey, as it first appeals to it through *sight*. We have therefore to deal not only with the palate, but with the eye as well; and we all know that sight has an influence on the palate. As an instance I may ask, of the two following, which would you most prefer? A good high-class meal served on a dirty table-cloth, with uncleaned cutlery and silver, or a slightly inferior but still wholesome meal on a clean white cloth with other things perfectly clean and attractive? Again, why is so much trouble taken to garnish our tables and food but to attract and influence the palate to the acceptance and enjoyment of that food.

A clean white comb, which in this case has to be *eaten* with honey, is attractive, and will compensate to a fair degree for some loss in the quality of the honey. So, on the contrary the least sign of discolourment, which is known or appears to be foreign to the substance, would be repulsive, and would nauseate the palate, so that although the honey was of good quality it would not compensate for the effect of the discolourment. Moreover, people purchasing sections for consumption do so by sight, and not by taste.

Wishing the Editors and all readers of our JOURNAL a Happy Christmas and a most Prosperous New Year.—GEO. HAYES, Notts.

THE W. BROUGHTON-CARR MEMORIAL FUND.

[8908] I think it a great pity you should have to plead so hard for such a worthy object; there are very few bee-keepers in Great Britain to-day who are not reaping the fruits of this gentleman's labour. If every bee-keeper using the "W.B.C." hive would subscribe 1d. per hive the money required would soon be forthcoming, or surely we ought to be able to find ninety-five bee-keepers of either sex having more of this world's goods than your humble servant who would subscribe 5s. for such a worthy cause. Although this is my third donation, we (my wife and myself) will start the ball rolling with 10s. Can the other ninety-three be found? Let the answer be Yes, so that the memory of W. Broughton-Carr may ever remain green. Wishing every bee-keeper a bright Christmas and a prosperous New Year.—J. PEARMAN, Derby.

MARKETING HONEY.

[8909] I hoped we should have some correspondence in the JOURNAL this week on Mr. Menzies' very interesting address to the B.B.K.A. The discussion on the paper showed that each speaker had had considerable difficulty in getting a market, and had overcome it owing to his faculty of anticipating what would attract the public and providing accordingly, or in other words showing that he was a good salesman. But it is the exception for a producer to be a good salesman, and in this age of specialising great waste ensues from attempting to market small quantities.

A comparison of the prices quoted by your correspondent, page 493, "English honey 56lbs. 9d. per lb.," and your advertisement columns, where the highest price asked for finest clover honey is 6½d. per lb., shows that there is a good margin for the expenses of working a co-operative business. I hope some business men with experience of co-operation will give us the benefit of their experience.—W. A. CARVER, Somerset.

BEE DISEASE A CENTURY AGO.

[8910] On turning out an old drawer I came across an old book on bees, by Robert Huish, published in 1817. On page 376 I find the following:—

"The great mortality which often happens suddenly in a hive, and which destroys the best peopled apiaries, is the principal cause which commonly discourages persons to persevere in the cultivation of the bee. In the method which in future is to be adopted, an easy and simple manner must be found of discovering the cause of that mortality, and of applying either a preventive or a remedy, by which, even if the loss be not prevented, at least the general destruction may be avoided of twenty or thirty hives at a time."

Does this refer to our old friend the "Isle of Wight" disease?—A. W. TOMLINSON.

THOSE "COOKED" ACCOUNTS.

[8911] Friend Crawshaw, castigator of all and sundry errors (see p. 489) which may happen in the BEE JOURNAL, is, as a modern Don Quixote, out to punish all imaginary caitiffs, who seemed to him disguished now as a flock of sheep, again as a giant windmill waving its arms. But in tilting against the latter, the erratic knight, as often happens to the incautious, received some shrewd knocks (mistake me not, I do not pose as the windmill). As, among other work, I have the honour to frame sundry accounts which appear before the readers of BEE JOURNAL at intervals. I may be presumed to know the Dr. and Cr. columns of a ledger. Still, even the most experienced (Mr. Crawshaw to wit), may make mistakes (to err is human), therefore I deemed it wise to submit this balance-sheet to one of our leading accountants. Strange! He was not clever enough to discover the blunder which Mr. Crawshaw has pounced upon. I wonder which of the two is correct. Has Mr. Crawshaw ever yet discovered a mare's nest?—J. SMALLWOOD.

AN EXPERT'S TOUR IN NORTHUMBERLAND.

[8912] At the invitation of the hon. secretary and committee of the recently-formed Northumberland B.K.A., I consented to make an autumn tour of the county. The northern part had previously been worked by the Cheviot and Tweed Borders Association, and my instructions were to visit all its members and make a tour of the whole county with the object of increasing the membership, so that things would be in working order for next season.

I am pleased to say the result of the tour was very satisfactory. Bee-keepers are anxious to prevent as much as possible the spread of the "Isle of Wight" bee disease, which unfortunately has made sad havoc of the apiaries in the Tyneside and Rothbury districts. Altogether, it is hoped to start next season with a member-

ship of close on three hundred, and, considering the many bee-keepers there are in the county, this should soon be exceeded.

I had the pleasure of visiting some of the local honey shows, and the exhibits at Wooler and Newcastle were excellent. The bee-keepers of Wooler and district have evidently been well taught, and I presume this is the result of the Association's work in these neighbourhoods. It may interest your readers to know that Northumberland is a great agricultural county, and quite suitable for bee-keeping. This year has been an excellent one, fine quality clover honey being secured, while the heather crop was a splendid one.

Heather-going in Northumberland has been brought to a high pitch of perfection, a special hive, easy for transit, is in general use. Taking into consideration the purpose for which it is made, namely, carting to and from the moors, I have very few faults to find in it.

I was interested to hear that thirty years ago the B.B.K.A. was so energetic as to send lecturers as far north as Morpeth, Alnwick, and Belford. Some of the best bee-keepers I have yet met with are located in this county, probably the outcome of instruction received by them long ago.

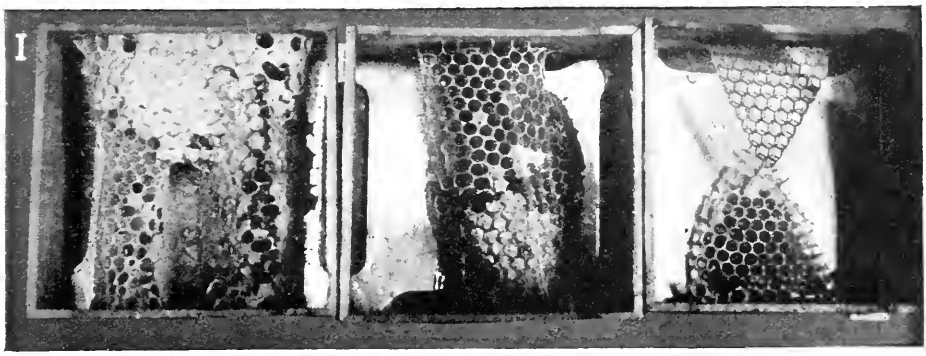
The heather harvest is the prominent feature among the bee-keepers here; everyone takes his bees to the moors, sometimes long distances over rough roads, at other times miles by train. Undaunted by last season's bad returns, very few kept their bees at home, and I believe this year they have been well repaid. Those bee-keepers who have not already joined the Northumberland B.K.A. will be well advised to do so at once, and communicate with the hon. secretary, Capt. Sitwell, of Wooler, who will be pleased to give them any information they desire.—JOSEPH PRICE, Haden Hill, Old Hill, Staffs.

BEE-WORK IN KASHMIR.

By Dr. E. F. Neve, Srinigar.

The hereditary handing on of acquired characteristics is a subject which has much interested men of science, and there is still doubt as to how far this occurs. Students of bees may be able to make some contribution to the problem.

In Kashmir some difficulty has been experienced in getting bees to work according to rule on comb foundation, and in sections. Some of this unwillingness is, I think, due to unfamiliarity with our modern appliances. If queen-excluder is put on top of the brood-chamber the tendency is for the spaces to be neatly closed with wax. At present nothing but the attraction of the queen on the opposite side or the seduction of honey or syrup will persuade bees to pass the objectionable grill, so I put on a rack of sections without using excluder, but here again the little colonists have shown a certain ineptitude. Instead of using the pendant starter of comb foundation, the tendency has been to build the comb from below through the passage and to at once join it on to the metal separator, and then utilise that as the foundation. This, of course, quite spoils the appearance of the comb in the sections (Fig. 1), and eventually it has to be cut out.



1. COMBS PROJECTED BY THE BEES INTO SECTIONS FROM BELOW AND THEN BUILT ON TO SEPARATOR.

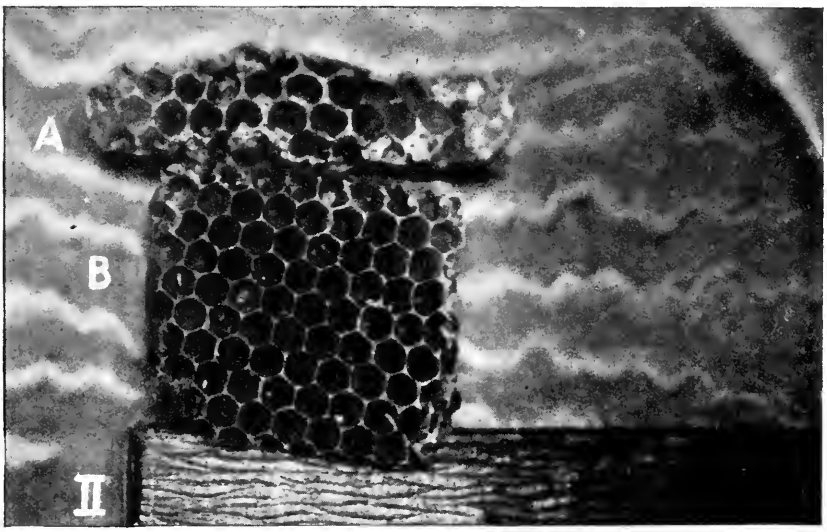
Even in the brood-chamber and on shallow storage frames there are irregularities, and brace-combs are frequently built. I suppose that irregularities in the shape of cells are fairly common in all apiaries, but when these deviations from the normal are not associated with transitions from worker to drone comb, or awkward corners, where the comb joins the frame, examination may show some other reason for the apparent fault.

In the case of Kashmiri bees I am inclined to think that the cells are slightly smaller than those in Europe. There is

often a marked disinclination to draw out the foundation at all. Sometimes narrow, parallel combs are interposed by the workers. These are of oval form with access on both sides—the bee-way running between the comb and the unused foundation. To the latter there may, however, be buttresses or even a fairly extensive attachment. If the cells of such comb be measured, the fact can be demonstrated that five and one-third go to an inch—each cell being a fraction under half a centimetre in width from the centre of one side of the hexagon to the nearest point opposite. In the case of the drone comb a similar deviation from European standards appears to exist; of this four and three-eighths cells go to the inch (Fig. 2).

ing the walls at the entrance, or even prolonging wax from the circumference of the entrance of a cell all round as a rim with a circular entrance smaller than the diameter of the cell itself—a circular doorway, in fact (Fig. 3). But any deviation from the normal, however interesting in showing resourcefulness, is eventually destined to spoil the mathematical exactitude of the work of these small master masons, and to introduce an element of confusion. Spaces remain between these modified cells which cannot be used for breeding. Later on they can be filled with honey, but some of them are so shallow that they are simply ignored by the bees.

In some of the frames I have seen the foundation not drawn out but utilised in



2. KASHMIR COMB, SHOWING TWO SIZES OF CELLS (*a*) TO ONE INCH, FOUR AND A HALF CELLS (*b*) FIVE AND ONE-THIRD CELLS TO THE INCH.

Each year, since I commenced keeping bees, I have succeeded in getting more comb foundation drawn out. So it would seem that, apart from my own acquired experience, there may also be progress in bee intelligence, handed down through successive generations. An examination of such combs, however, shows that the busy workers do meet with difficulties, and it is interesting to observe the way in which they try to dispose of them. In some of the combs when the cells have been correctly drawn out on the foundation to a depth of about one-eighth of an inch, they are abandoned and work is carried on elsewhere. In others an attempt is made to narrow the cells either by sloping them in and making them somewhat pear-shaped towards the mouth, or, on the other hand, frequently by thickening just the same way as any smooth surface might have comb built upon it. Not a few frames, however, are worked out properly, but on measurement the cells are found to be four and a half to the inch, or slightly less. On comparing such comb with the bees' own (*i.e.*, comb built without artificial foundation), the latter strikes one as finer in texture, thinner, and on holding it up against the light the partition wall between the bases of the cells is also much thinner and the markings are finer and more symmetrical.

(*To be continued.*)

CAPPINGS OF COMB.

BY L. S. CRAWSHAW, NORTON, MALTON, YORKS.

Faulty Winter Stores (p. 445).—Just what do you mean, "D. M. M." by "the

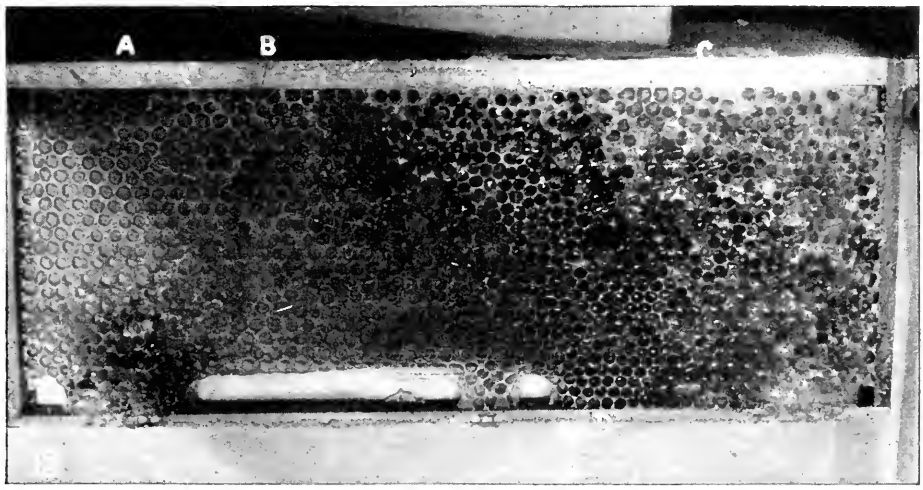
seeds of granulation"? That is to say, other than imperfect solution of the sugar, to which you refer separately. I am sure we should welcome an article from your pen dealing with granulation, its cause and prevention. Such an article, particularly with reference to "sugar," would be of practical value. Incidentally, I should like to suggest to Mr. W. F. Reid the idea of a paper upon the chemistry of honey.

Keeping Bees in China (p. 449).—We have heard a good deal lately about the beneficial results of dosing bees with quinine, but that we should propose to keep our British bees in China (!! for remedial measures is surely carrying them too far! China in bees may be all right, but bees in China——! In this connection, an incredible experience of last summer may be related. A stock which had been treated for "Isle of Wight" disease was found to be emitting strange cheeping noises every evening, as though a lot of young queens were at large. Upon investigation, however, it proved to be merely the convalescent bees saying "Chin, chin," as they took their little nightcaps of quinine!

The Midnight Daughter (p. 455).—No doubt you have often wondered what becomes of the inebriated bee seen from time to time drowsing in its cups upon some heady flower, and wondered what to do about it. Mr. F. Dundas Todd would give these strayed revellers every encouragement to collect themselves. He says, "Whenever bees hang out at night enlarge entrance. If necessary, raise front of hive, and if that is not enough, raise rear of hive also." That ought to enable them to get home without a latch-key, however dissipated.

The Duties of an Expert (p. 456).—Practical acquaintance with the said duties is written all over this letter from Mr. J. Herrod. I cannot help thinking, however, from practical experience of my own, that he rather over-estimates the running cost of an ordinary cycle, and also of a motor-cycle, even when the tyre account is included. Also, it is not easy to understand his attitude with regard to the purchase of such a machine. One would hardly expect the whole cost to be borne by a single tour, for something not unlike the original machine should be left at the end of it.

Driving with Makeshifts (p. 458).—"W. R. M." had difficulty in fixing up his skep owing to lack of regular tackle, and the delay caused trouble. But almost anything can be pressed into service in such an emergency. Very serviceable dogs can be made from strips of wood, having long nails driven through at the ends, or a couple of struts may be made from small boughs, the ends being pointed or crutched. Failing a skewer for the back, a long nail can be used, or the skeps can be put together, and a hinge made by pressing a few short nails into each and intertwining a piece of string. Driving is possible without any attachments whatever, but a kitchen skewer and a bucket are usually obtainable; then, if the upper skep be leaned back into the angle formed by two walls, a fairly secure arrangement is obtained. A piece of string may be attached by its middle to a nail driven into



3. IRREGULAR COMB. BELOW (*a*) ARE MANY RIMMED CELLS. NOTE THE SPACES BETWEEN CELLS, AS AT (*b*) DUE TO CELLS BEING SMALLER AT MOUTH THAN BASE. (*c*) DISORDERLY CELLS. (*d*) COMB MORE REGULAR WHERE FOUNDATION HAS CEASED.

the wall above, or even to a stout stake in the corner, and the ends of string fastened to the upper skep. This leaves both hands free, but it is essential to subdue the bees before driving, after which such manipulations usually start the bees on the run.

Stingless Bees (p. 465).—I should like to draw Mr. Smallwood's attention to "Nemo's" review of an article upon "Bees in Java." Here is a fairly authoritative reference to stingless bees.

An Idea for Dividing (p. 466).—This plan might work, or it might not. Helpful pronouncement! It will not work; nothing will work equally if one-half be made queenless. The queens must be "equal and opposite." In any case, with our type of hive, with its projections, an additional board would be needed to bridge the alighting-boards. The vertical line is probably unnecessary. Some adjustment of the entrances might help to equalise forces, for bees often drop to the alighting-board out of the direct line, and run along the face of the hive to find the entrance. But the whole scheme seems a lot of useless labour. What advantage does it offer over the old plan of removal of the stock hive, allowing the old bees to return to their queen on the original stand? Less than none, I venture to think. Now, if the case considered were one of uniting, some such precaution might be needed, but for dividing the old plan is better, in that one hive at least should give surplus. Something of course must depend upon what the bee-keeper desires and the character of the flow.

Queries and Replies.

[8893] *Ridding Combs of Wax-moth.*—I have some shallow combs slightly damaged by wax-moth, and containing a few moths in various stages. I propose to put them in an air-tight tin box with a saucer containing a little carbon bisulphide. I shall be greatly obliged if you will let me know as soon as you possibly can, in your correspondence column, whether, in your opinion, that will successfully destroy the wax-moth larvæ without damaging the combs. Can you suggest a better way?—H. A. Greatorex.

Reply.—Your method is quite the right one to use. You might use sulphur in the same way; the latter is less likely to taint the combs.

[8894] *Cane and Beet Sugar.*—By what simple test can bee-keepers know whether sugar is from cane or beet? A sugar expert tells me that one is equal to the other for the bee, but I prefer to take expert advice on bees from bee experts.—E. T. Liverpool.

Reply.—There is no simple test for distinguishing cane from beet sugar, and as it is the potash salts in the latter that are detrimental, it is only possible to detect them by chemical analysis. As it is difficult to purify beet sugar and to get rid of all the potash salts, it is sometimes possible to detect them by the disagreeable odour. These salts cause fermentation, and it is principally for this reason that cane sugar is to be preferred.

Notices to Correspondents.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

Suspected Disease.

R. S. W. (Romford), W. F. D. P. (Perths.), and J. D. (Ivybridge).—The bees have died from "Isle of Wight" disease.

L. S. F. (Wimbledon).—(1) It is "Isle of Wight" disease. Destroy at once. (2) They are Italian bees.

Lover of Bees (Patcham).—The bees were too dry for us to discover cause of death. (Thanks for your good wishes, which we reciprocate.—Eds.)

W. B. (Southport).—(1) The bees have died from dysentery. (2) Caused by the syrup they have gathered. (3) Do not use the combs again, melt them down for wax after extracting the syrup. Could not the neighbouring bee-keepers approach the factory people and get them to protect their windows with wire gauze. The bees must cause them great annoyance. You cannot prevent the bees going there if they can get in.

IMPORTANT NOTICE.

Owing to the increased work of our staff in other directions, and also on account of so many subscriptions remaining unpaid, we are unable to undertake the extra work and expense involved in sending out bills for small accounts, or yet bear the loss of these unpaid sums. We therefore respectfully notify our subscribers that the "Journal" will not be sent unless the subscription is prepaid.

New Volume commences January 1st.

Editorial, Notices, &c.

CHRISTMAS WISHES.

As this number of the "B.B.J." will be in the hands of our readers on Christmas Day, we gladly avail ourselves of the opportunity for conveying our sincere wish that it may be a day of joy and happiness in every household where the BEE JOURNAL is read.—The EDITORS.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at 23 Bedford Street, Strand, London, W.C., on Thursday, December 18th, 1913. Mr. W. F. Reid presided. There were also present: Messrs. C. L. M. Eales, J. N. Smallwood, E. Watson, R. H. Attenborough, A. G. Pugh, A. Richards, J. B. Lamb; Association representatives, G. S. Faunch and G. R. Alder (Essex), Miss H. Inglis (Croydon), G. J. Flashman (Barnet), G. Bryden and G. W. Judge (Crayford), J. Price (South Staffordshire), and the Secretary, W. Herrod.

Letters expressing regret at inability to attend were read from Miss Sillar, Sir Ernest Spencer, Messrs. T. W. Cowan, D. Seamer, F. Harper, O. R. Frankenstein, W. S. Sanderson, Revs. F. S. F. Jannings, and G. E. H. Pratt.

The minutes of the Council meeting, held on November 20th, 1913, were read and confirmed.

The following new members were elected:—The Lady Isabella G. K. Battie-Wrightson, Mrs. Claston, Rev. D. Lloyd Jones, and Mr. W. Burn.

The following Associations nominated representatives to the Council, and the same were accepted:—Bedford, Mr. N. P. Symonds; the Soke of Peterborough and District, Mr. J. Hill.

The report of the Finance Committee was presented by Mr. J. Smallwood, who stated that the payments into the bank for November amounted to £85 17s. 2d., the bank balance being £228 13s. 10d. Payments amounting to £100 19s. 1d. were recommended.

The report of the Examining Board on the lecture test was presented by Mr. W. F. Reid, and it was resolved to grant the First Class (Expert) Certificate to Mr. J. Price (Staffs.)

An application for examination for certificate of proficiency in lecturing by W. Herrod was granted, the lecture to be given at the next conversazione.

The next meeting of the Council will take place on Thursday, January 15th, 1914, at 23, Bedford Street, Strand, London, W.C.

W. BROUGHTON-CARR MEMORIAL FUND.

	£	s.	d.
Amount already acknowledged...	8	3	6
Anonymous	1	0	0
A. L. C. Fell	0	10	0
Dr. Anderton	0	5	0
J. Y. Street	0	5	0
N. C. Elstob	0	5	0
H. Stubbs	0	2	6
J. Bowden	0	2	6
H. Gow	0	2	0
A. M.	0	1	0
W. G. Augur	0	1	0
H. W. Reid	0	1	0
	£10	18	6

WHITBY AND NORTH-EAST YORKS B.K.A.

This Association (a branch of the Yorkshire B.K.A.) held a show of honey and bee products on November 26th, in the Church House, Flowergate, Whitby; which was very successful in every way. Mr. W. Herrod acted as judge, and Mr. W. E. Richardson, of the Central Yorkshire B.K.A., as steward. Mr. Herrod expressed the opinion that he had not seen a better show of heather honey in any district. The awards were as follows:—

Three 1-*lb. Sections Flower Honey.*—1st, Geo. Garbutt, Ingleby Barwick; 2nd, John Jackson, Malton; 3rd, Mrs. E. Adamson, Yarm; h.c., J. Corbett, Mulgrave.

Three 1-*lb. Sections Heather Honey.*—1st, E. Baker, Wandales; 2nd, H. J. Skaife, Pickering; 3rd, H. Turnbull, Malton; v.h.c., Mrs. E. Adamson; h.c., Mrs. W. Bowes, Stokesley.

Three 1-*lb. Jars Extracted Honey.*—1st, Geo. Garbutt; 2nd, Mrs. E. Adamson; 3rd, R. Hunton, Fryup, Lealholm; v.h.c., A. E. Harrison, Pickering.

Three 1-*lb. Jars Heather-Blend Honey.*—1st, Geo. Garbutt; 2nd, Mrs. E. Adamson; 3rd, J. Shaw, Sandsend.

Three 1-*lb. Jars Heather Honey.*—1st, W. Burn, Whitby; 2nd, Geo. Garbutt; 3rd, E. Baker; v.h.c., J. Shaw; h.c., H. J. Skaife.

Shallow Frame of Comb Honey.—1st, R. Hunton; 2nd, J. Shaw; v.h.c., C. R. Pinkney, Sleights.

Beeswax.—1st, H. J. Skaife; 2nd, Mrs. E. Adamson; v.h.c., W. Burn.

Six 1-*lb. Jars of Honey* (*Selling Class*).—1st, H. J. Skaife; 2nd, Robert Hunton; 3rd, Geo. Garbutt; v.h.c., Mrs. E. Adamson.

1-*lb. Section* (*Novices' Class*).—1st, Mrs. Tinley, Sandsend; 2nd, I. Yeoman.

1-*lb. Section* (*Gift Class*).—1st, E. Baker; 2nd, Geo. Garbutt; v.h.c., J. Jackson.

Single 1-*lb. Jar of Honey* (*Gift Class*).

—1st, J. Shaw; 2nd, H. J. Skaife; v.h.c., Mrs. A. T. Bulmer, Whitby.

Best Made Skep.—1st, H. J. Skaife; v.h.c., Robert Hunton.

Bee Candy.—1st, Mrs Harmston, Sleights; 2nd, Mrs. A. T. Bulmer.

Special Prize Awards.—Silver Medal, E. Baker, for three heather sections; Bronze Medal, W. Burn, for three jars of heather honey; "Small-holder" Silver Medal, Geo. Garbutt; "Small-holder" bound volume, H. J. Skaife; "Small-holder" ladies' special prize, Mrs. E. Adamson.

During the afternoon Mr. Herrod delivered a most interesting and concise lecture under the title of "A Year's Work in the Apiary," and was closely followed by a large audience, many of whom had come from long distances to be present. The lecture was illustrated by seventy lantern slides, which were of unusual interest. A number of questions were asked at the close, and were answered by the lecturer.

Mr. Pinkney moved a vote of thanks to Mr. Herrod for his very interesting address. It was the best lecture the Association had had. The fact of Mr. Herrod coming from London was a lesson to members of the Association. They were getting one of the direct benefits of the Government grant to bee-keepers.—C. R. Pinkney and P. Francis, Joint Secretaries.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

REARING QUEENS IN SUPERS.

[8913] With reference to Mr. Macdonald's notes on page 504, perhaps your readers will be interested to hear of an experiment I made in 1912.

Having cut out several queen-cells from stocks to prevent swarming, and not wishing to waste them, I put them all in a super over a strong stock, and fixed them with pins between the tops of the frames. In due course, five or six fine queens hatched out, but I had no immediate use for them. They lived in apparent harmony for a few days, and then died.—Novice. Hull.

IS SPRING DWINDLING FATAL?

[8914] At first sight this appears to be a bee-keeper's conundrum, but as Mr. Desmond's letter is full of useful points at this time, I thought I would like to add my mite. To take into consideration the extent of the mortality I suppose would furnish the answer, and an accurate diagnosis of the cause would decide the course to be taken. As the term spring dwindling is generally understood, it is not a disease, and though regrettable, is generally avoidable. On referring to Mr. Desmond's communication on page 387, *re* 10lb. of stores for wintering, there we should find one cause. Again, the 60lb. brood nest (page 499). I infer from his former letters this is also a skep. This would furnish another cause, both extremes, but under the one head, viz., failure of the queen to lay late in autumn and recruit the ranks of the overworked inhabitants (this is one of the disadvantages of the skep system, and must be borne). However, 60lb. would be a very good take, although not quite coinciding with Mr. Desmond's tabulated theories. I do not quite see how he would note the absence of passage way over "frames" though. I should like to recommend interested readers of the Board of Agriculture leaflet, No. 253, to send 1s. for the supplement issued by the Board, which gives all that is known about "Isle of Wight" disease (though unfortunately no cure).—A. H. Hamshar.

BEE-WORK IN KASHMIR.

By Dr. E. F. Neve, Srinigar.

(Continued from page 508.)

Although Kashmir is fortunately, so far as my knowledge goes, free of foul brood and "Isle of Wight" disease, there is one pest which is universal. I refer to wax-moth. Scorching the hive and frames and putting in fresh foundation always gives a respite, but even then in the warmer months fresh infection occurs. The moths evade the sentries at night—perhaps finding them asleep or absent—and eggs are laid in the débris on the floor, or often actually under the frames. The caterpillar, when fully developed, is large, measuring sometimes nearly two inches. When entering the chrysalis stage, a dense felt-like texture is woven around, which the bees are absolutely unable to deal with, and the grub is able to prepare itself a snug hollow by actually gnawing out cavities in the wood of the frames (Fig. 4). All cracks and recesses remote from the area actually occupied by bees are apt to become infested, and the use of old extracted comb necessitates much watchfulness. Frequent changing of the floor-board and occasional detailed examination of frames keep the hive clear from this Nemesis of slothful bee masters.

The 1913 season here was one of great drought. Srinigar is usually almost absolutely rainless during the summer, and food for bees is always scarce. In the up-

lands and mountain valleys it is different: there on the hillsides balsams and boraginous plants abound.

In Kashmir we miss the heather and the fields of white clover, and sainfoin. In the spring the fruit blossom is abundant and charming, but Kashmiri bees are inveterate swarmers, and lose much of the value of the richest season. This fault one is able to rectify by the usual methods, but to raise large colonies and keep them prosperous during extreme drought taxes the resources of the bee master to the utmost. From my best and most prosperous hive I only got about 25lbs. of extracted honey.

And, if necessary, cloths wrung out in five per cent. carbolic acid solution are hung over the alighting-board.

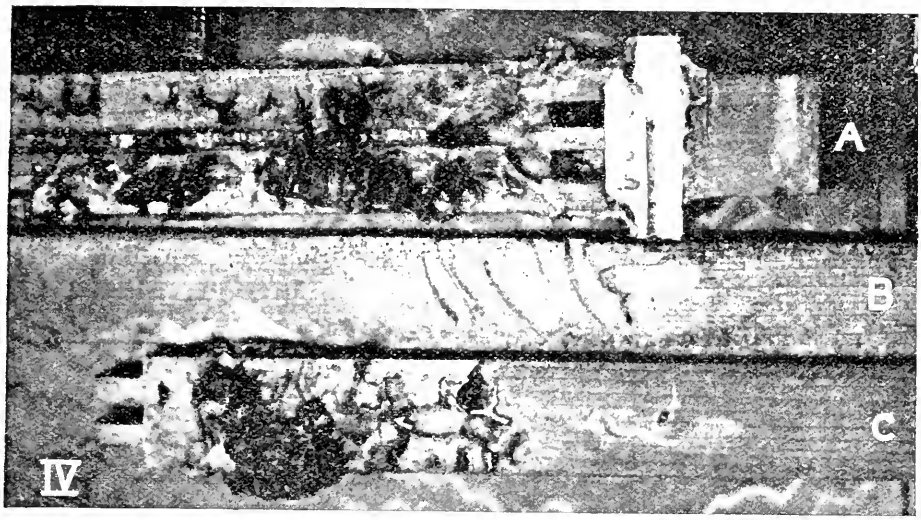
The most popular source of nectar is perhaps the wallflower. Borage and sainfoin, both of which I have imported, are much visited. In the autumn I have seen bees push their way into antirrhinums. It is a pretty sight to watch them forcing open the dragon's mouth.

AMERICAN AND COLONIAL PAPERS.

EXTRACTS AND COMMENTS.

By D. M. Macdonald, Banff.

A Super Opener.—I have so frequently seen bee-keepers making frantic efforts to



4. RAVAGES OF WAX-MOTH. (*a*) ACTUAL PERFORATION OF UPPER FRAME BAR. (*b*) DEEP EXCAVATION OF UNDER SURFACE OF LOWER BAR. (*c*) INNER SURFACE OF LATERAL BAR.

Robbing occurs usually in the autumn, after honey has been taken. Extracted combs, even when given back late in the evening, provoke desperate assaults from hungry outsiders, and sad tragedies occur. In one day quite four hundred bees were killed in my apiary.

I watched one fight. A robber came; two sentries seized it. A desperate affray on the alighting-board ensued, lasting for nearly five minutes. The robber was trying to use its sting. Eventually it pierced the front of the thorax of one of the defenders, and the other defender at once flew back into the hive. The robber, with difficulty, freed itself from the dead body, and then went off. The poor victim had died in a few seconds, and the sting could be clearly seen. To strengthen the defences, I put a slip of glass in front of the contracted entrance, and a strip of lath four inches long transversely in front.

take out their completed sections individually from the rack that I am glad to extract the following from *The Review*:—"Nail two boards, about 2in. by 4in. and about 12in. long, to the work bench. Set the super over these and give the rim of the rack a smart tap or two with the hammer, and this will drop down over the 2in. by 4in., when the sections will all stand out of the case." Here we use two boards, about 2in. square, arranged to come between the rows of sections. Lay the rack over these, after withdrawing the follower or wedge, and press firmly down, when the case will sink and the sections rise clear of the rack, thus enabling them to be withdrawn singly from the case, and that without any chance of breaking the wood or pinching the honey.

Heather in France.—Mr. Dadant, writing of "The Landes," tells us: "The

growth is confined to numerous ferns, scrubby pines and cork oaks, with a very thick undergrowth of heather. Just now (autumn) the heather is in its fullest bloom, and there are, perhaps, twenty different varieties, from the palest pink to almost red and deep yellow colours. It is a mass of flowers, upon which the bees work from mid-June until frost, which in this region is very late, usually November. So we may readily call this the El Dorado of bee-keeping." He does not commend the honey, nor does he discommend it, although he thinks its dark deep amber colour and strong flavour, as well as its excessive consistency, a drawback—all points in its favour to those who know its true virtues!

Clover Flowers.—Nature seems to be infinitely kind to the bees, and in countless ways saves them from vain labours. Here is an example: The florets of white clover raise their heads invitingly to the bee, almost asking it to make a call. This is in the early stages, when it can yield nectar to the bee and the insect can bestow the pollen required to complete fertilisation. Once the flower secures its heart's desire, it ceases to court the bee and droops its head, bending the outer florets downwards, thus telling that a call would be a waste of precious time. The bees therefore pass them by unheeded, and confine their attention to the newly expanded blossoms. Finally, all the flowers bend down, because all that is left them to do now is to mature their seeds. One can see the gradual process in a field of clover, until at last the russet hue of the once pure white disappears from view. It is clear, here, that it must be an advantage to these flowers to act just as they do, for in this way seeds are protected from sun and rain until they become thoroughly ripened. Many other flowers act very much in the same way and hang out, as it were, signals to the bees, which reveal to them that they may expect value for their visits, or that they have passed the stage when the one may mutually bless the other.

A Honey Receipe.—Madame Maeterlinck, according to *Gleanings*, is a confirmed believer in the value of honey as a food. Here is her recipe for Honey Brine to cure hams: "To make a brine use 4lb. of coarse salt and 1oz. of saltpetre, 2lb. of honey and 2 gallons of water. All the ingredients are blended and poured over the hams, which are permitted to rest in the honey-brine for six weeks, when they are found to be marvellously saturated with a flavour that is truly indescribable."

Embedding Wires.—The question how we can best wire frames so that there may be no "sag" is a complex one. Here we generally advise pulling them so tight that they can be made to tang when pressed with the finger, which, of course, presupposes that they all lie in a straight line across the sheet of foundation. Mr. Hubert Root illustrates his process of embedding them without quite tightening them. He imbeds the first wire, the one nearest the top bar, with what sag there is below the horizon, *i.e.*, curved slightly down. The next wire should curve down slightly, the third wire should be about straight, and the fourth or lower wire should have a decided curve *up*. Beginners should be warned that loose or careless wiring is often accompanied with defective comb, as the sheet buckles or stretches, the wire often helping in pulling it down and thus producing defective combs.

Corrections.—A few printer's misprints may be put right here. Page 126: "Alternating" should read *alternatively;* 314: "Presence" should be *prescience;* 384: "Idol" should have been *ideal.* Somewhere, I am informed, I dropped a *not* in dealing with frame handling, which spoiled the sense.

A Merry Christmas to friend and foe!

A MNEMONIC.

(For explanation see "Guide Book," p. 12.)

In three days all depart their eggs.
Five for grub, but six *he* begs.
Then for spinning one, two, three;
Resting two, three, four, you see;
One to change, and in a week,
(Queen three days) the light they seek.

—G. G. D.

Notices to Correspondents.

S. H. (Derbyshire).—*Honey Toffee.*—A recipe for making this appeared in "B.B.J." for March 18th, page 108.

Suspected Disease.

J. E. J. (Pontardulais), Novice (Kircudbrightshire), Cornev (N.B.), Perplexed (Sheffield), Noviciate (Essex), and Novice (Sale).—The bees have died from "Isle of Wight" disease.

J. H. W. (Burton).—From your description we are afraid it is a case of "Isle of Wight" disease. If you send a few bees we shall be able to form a better idea.

[Owing to the Index occupying so much space in this week's "B.B.J." we are obliged to hold over several articles, queries, &c., until our next issue.—Eds.]

INDEX.

EDITORIALS, NOTICES, &c. :—
Another Year of Progress, 81
B.B.K.A. Library, The, 112, 145
Bee Diseases Bill, 61, 101, 174, 241
Bee-Keeping in Algeria, 21
Bee-Keeping in Other Countries, Lecture by Mr. T. W. Cowan, 171, 181, 191
British Bee-Keepers' Association, 111, 211; Annual Meeting, 131; Conversazione, 143, 151, 161, 171, 181, 191, 412, 441, 461, 471, 481; Council Meetings, 31, 81, 142, 161, 201, 251, 271, 381, 431, 474, 511
Correction and Encouragement, 184
Death of Lord Avebury, 221
Death of Mr. C. N. White, 502
Interesting Meeting, An, 411
Legislation, 121, 133
Mr. Runciman and Bee Disease, 174
New Edition of Bee-Keepers' Guide Book, 241
Parliament and Bee Disease, 121
Prominent Bee-keepers—Miss M. D. Sillar, 141
Royal Show at Bristol, 201, 271
Suffolk B.K.A., 421
Swiss Foul Brood Insurance, 111
The Weather of 1912, 11
Visit of B.B.K.A. Representatives to Paris, 211
Volume Forty-one, 1
W. Broughton-Carr Memorial Fund, 8, 21, 37, 68, 491, 505, 511

REVIEWS (Editorial) :—
A B C and X Y Z of Bee-culture, 311
Atlus Estestvennoy Istoreea Ptschelar, 41
Childhood of Animals, 194
Fruit Farming, Practical and Scientific, 41
Fungi of the Bee-Hive, The, 41
Garden Work : Practical Manual of School Gardening, 133
Glavniya posechniya rabotte, 312
Honey Star The, 83
Manipulation of Wax Scales of the Bee 91
Ptcheli ich Gisn, 312
Queen-Rearing in England, 491
Report on "Isle of Wight" Disease, 311
Sac Brood : A Disease of Bees, 91
Wax-craft (in Russian), 101

REVIEWS OF FOREIGN BEE JOURNALS. By Nemo :—
Bacteriological Course in Bee-Keeping, 501
Bees in Java, 465
Bee-keeping in China, 502
Cav. Andrea de Rauschelfels, 432
How Bees Defend Themselves, 502
Number of Hives in Germany, 432
Pasteurisation of Honey, 464
Production of Honey and Wax in Chili, 432
Reason for Poor Honey Harvest, 432
Strange Bee Journal Editor, 432

AMONG THE BEES. By D. M. Macdonald, Banff :—
Aiding Bees Judiciously, 195
All-worker Comb, 483
Arrangement of Winter Brood-nest, 413
Artificial Increase, 231, 241
Autumn Feeding, 351
Bee-Keeping as it Ought to be, 213
Bee-Keeping in Schools, 72
Bees on the Farm, 175
Bee Veils, 134
Colour of Pollen, 21
Comb Capacity, 195
Dealing with Vicious Bees, 265
Doubling, 113
Dysentery, 445
For and Against House-Apiaries, 196
Forcing Bees into Sections, 281
Good Idea, A, 465
Hints on Smokers, 333
Hive Entrances, 53
Hive Stands, 391
Honey Season for 1913, 412
How Are Stores? 155
Introducing and Rearing Queens, 373
Kill to Cure, 113
Modern Advance, 2
Monthly Record, The, 72
Practical Illustrations, 333
Queens for Increase, 373
Season Up to Date, 333
Section Exhibits, 333
Selection, 92
Sheltering Hives, 112
Signs of Queenlessness, 282
So-called Cures, 3
Some New Appliances, 465
Spreading Disease 413
Spring Packing, 153
Spring Pollen, Artificial, 155
Supersedure Cells, 372
Value of Honey, 195
Water in Spring, 154
Wax Scales, 282
Well Stored Larder, A, 282
Where to Rear Queens, 503
Why Re-queen? 314
Wire Fences, 466

HELPFUL HINTS FOR NOVICES. —By W. Herrod :—
Artificial Swarms, 273
Care of Appliances, The, 13, 42
Fitting and Wiring Frames, 222, 232, 242
How to Destroy Colonies of Bees, 321
How to make a Smoker, 103, 122
How to make an Extractor, 162, 184
Manipulating a Frame Hive, 494
Packing Bees for Travelling, 202
Suggestions from Readers, 62
Uniting Bees, 341

CAPPINGS OF COMB. By L. S. Crawshaw, Norton, Malton, Yorks :—
Animalogical or Anymorelogical, 178
An Amateur's Notes, 126
An Unknown Sense, 158
Artificial Increase, 287

CAPPINGS OF COMB (cont.).
Artificial Stores for Winter, 199
Appearance of Queen, 178
Bee-Keeping for Women, 126
Bee-Keeping in New Zealand, 316
Bees in an Awkward Position, 489
Bees on the Farm, 217
Brace Combs, 357
Candied Honey in Combs, 199
Chastity and Bees, 265
Clipping Queen's Wings, 366
Colony or Stock, 248
Compound Eye of the Bee, 9, 36
Creosote for Uniting, 489
Destroying Stocks, 317
Does a Bee Drown? 78
Doolittle's Dummies, 398
Driving Bees, 266, 509
Duties of an Expert, 439, 459, 509
Empty Racks Over or Under, 316
Evenly-built Combs, 217
Faulty Winter Stores, 508
First Frame, The, 37
Fitting Frames, 266
Fixed Comb Hives, 416
Fixing Tool Handles, 10
Flight of Bees, 59, 78, 126
Fool-proof Skep, The, 459
Foul Brood in Italy, 489
Germicides and Disease, 98
Gorse as a Honey Plant, 9
Hail, Smiling May! 217
Hands Across the Sea, 37
Heather and Frost, 398
Heating the Embedder, 159
Hive Stands, 458
Hive Ventilation, 98, 317
Home-made Slow Feeder, 439
Honey Judging, 459
How Does a Bee Find Nectar? 198
How Pollen is Gathered, 78
Idea for Dividing, 510
"Isle of Wight" Disease, 217, 266, and Foul Brood, 416
Keeping Bee Accounts, 489
Keeping Bees in China, 509
Life of Worker, 10
Lysol, 376
Midnight Daughter, 509
Microscopic Measurement, 126
Mixed Diet, A, 375
Non-Standard Frames 398
Old Bee Journalism, 8
One Word for the Skep, 256, 416, 438
Petrified Honey, 78
Problem of Selection, 126
Plain Reading and High Thinking 356
Preventing Drone-Rearing, 287
Prevention of Increase, 316
Prevention of Swarming, 288
Quantity of Nectar per Flower, 178
Quis Custodiet? 158
Removing Propolis, 78
Removing Supers from Vicious Bees, 376
Re-queening, 416
Sealed Book, A, 459
Single-Walled Hives, 159
Skep, The, 266, 338, 416, 438
Smoker, The, 376
Snakes and Bees, 397
So-called Cures, 37
Spiracles of the Honey Bee, 59

CAPPINGS OF COMB (*cont.*).
Spring Cleaning, 288
Stingless Bees, The, 357, 510
Strengthening for the Heather, 59
Subduing Bees, 9
Successful Skeppists, 439
Swarming Vagaries, 266
Time Before Queens Begin to Lay, 248
Title of Bee Master, 59
Transferring Bees, 338
Treating Disease, 317
Use of Skeps, 376
Vigorous Stock, A, 37
Washing the Extractor, 338
Water in Spring, 198
Wax Scales, 317
Weil's Perforated Dividers, 398
Where Bees Pay, 248
Windbreaks, 158

RANDOM JOTTINGS. By Chas. H. Heap :—
Advocacy of Large Skeps, 337
An Early Swarm, 187
Bees and Snakes, 337
Belated Wasps, 29
"Big" Bee-keepers Opposed to Legislation, 291
Checking Wax-Moth, 116
Futility of Germicides, 45
Lack of Quilts, 187
Novel Claim for the Skep, 422
Old Bee Journalism, 28
Old or New-fashioned Winter Feeding, 337
Public or Private Good, 292
Stocks at 8/6 a-piece, 292
Traffic in Diseased Bees, 291
Why are Stocks Weak? 186

AMERICAN AND COLONIAL PAPERS. Extracts and Comments. By D. M. Macdonald.
Bee Diseases' Act in Texas, 345
Bee-Keepers' Review, 167
Bees by Parcels Post, 128
Bees Love Black, 345
Bee-Veils, 46, 127
Box-Hives, 167
Canadian Bee Journal, 388
Carniolans, 388
Checking Swarming 306
Clover Flowers, 514
Co-operation, 345
Curing Spring Dwindling, 46
Depth of Frames, 47
Do Bees Reason? 428
Doolittle's Dummies, 345
Drifting Bees, 207
Effects of Shelter, 305
Embedding Wires, 514
Extraordinary Honey Yields, 307
Farmer Bee-Keepers, 207
Fancy Sections, 345
Foul Brood Odour, 128
Hive-Stands, 206
Honey Recipe, 514
How Far Bees Fly, 478
Increase and its Prevention, 254
Introducing with Smoke, 388
Inspection of Apiaries, 88
Kill to Cure 47
Legislation, 128
Longevity in Bees, 87, 478
Mating Queens in Switzerland, 387
Michigan Foul Brood Bill, 307
Milk Route, A, 478
Moving Bees, 167
New Honey Strainer, 88
New versus Old Combs, 428
Non-Painted Hives, 307
Nucleus Swarming, 344
Out-Apiaries, 207
Over Ventilation, 47
Paper Round Foundation, 47
Pollination, 206
Red Clover Bees, 307
Removing Propolis, 47
Selecting a Good Queen, 127
Strong Colonies, 388
Sugar Feeding, 167, 478
Super Opener, 513
Swiss Bees, 479
Twelve-frame Hives, 128

AMERICAN AND COLONIAL PAPERS (*cont.*).
Two Typical Bee-Keepers, 428
Useless Drones, 478
Value of Protection, 47
Value of Queens, 46
Well-built Combs, 429
Where Bees Pay, 206
Wintering, Safe, 87, 88
Women Bee-Keepers, 128

BEE AND HONEY SHOWS :—
Altrincham Agricultural Society, 401; Ayrshire, 441; Bridgenorth and District, 332; Capetown, 201; Cheshire, 371; Chiswick, 281; Cumberland and Westmorland, 401; Dairy Farmers, 431; Derbyshire, 361; Essex, 261; Glamorgan, 321; Grocers' Exhibitions Co., 282; Hitchin and District, 332; Leicesters, 331; Lincolnshire, 301; Manx B.K.A., 482; Northants, 391; Northumberland and Durham, 383; Notts, 383; Olney (Bucks), 372; Richmond, 261; Royal Show (Bristol), 271; Sheffield, 485; Somerset, 351; Staffs, 331; Surrey, 341; Sussex, 371; Worcesters, 361, 501; Yorks, 301

MEETINGS OF BEE-KEEPERS' ASSOCIATIONS :—
Berks, 174; British (Annual Meeting), 111, 131; Cheshire, 102; Cheviot and Tweed Borders, 103; Devon, 71; Essex, 92; Glamorgan, 61; Glastonbury, 162; Gloucesters, 82; Hereford, 91; Lincs, 132; Leicesters, 453; Middlesex, 491; Norfolk, 222; Northants, 91, 121; North of Scotland, 154, 281; Notts, 111; Richmond, 251; Scottish, 92, 153; Shropshire, 231; Sheffield, 154, 241, 337; Somerset, 71; South of Scotland, 61; South Staffs, 162, 184, 302; Suffolk, 132; Surrey, 212; Sussex, 133; Warwickshire, 112, 154, 161 Whitby and N.E. Yorks, 511

A B C of Bee Culture (New Edition), 206, 311
Accounts, Keeping Bee, 434, 489
Advertiser's Grievance, An, 116
Advocacy of Large Skeps, 337
Aiding Bees Judiciously, 195
Algeria, Bee-Keeping in, 21
Alleged Poisonous Honey from *D. Stramonium*, 358
All-worker Comb, 453
Amateur's Notes, An, 126
Animalogical or Anymorelogical, 178
Another Year of Progress, 81
Antiseptics and "Isle of Wight" Disease, 283
Apiary in Paris, Experimental, 211
Apiary, Suitable Position for, 29
Apiaries, Inspection of, 88
Apicure, Using, 278, 328, 375
Appearance of Queen, 178
Appendage on Bee's Head, 210
Appliances, Care of, 13, 42
Appliances, Some New, 465
Appliances, Useful, 414
Artificial Increase, 231, 241, 273, 287
Artificial Pollen in Spring, 155
Artificial Stores for Winter, 199
Association versus Private Experts, 178
Associations and their Work, 26, 44, 56, 57, 67, 77, 87, 139, 302
Australia, Legislation in, 334
Autumn Feeding, 351
Avoiding Disease, 306
Aylets' Cure and Robbing, 448

Bacteriological Course in Bee Diseases, 502
Bee Accounts, Keeping, 434, 489
Bee Books, Old, 86, 115, 136, 139, 147, 204
Bee Disease a Century Ago, 506
Bee Disease in Scotland, 69
Bee Diseases Bill, 80, 101, 438
Bee Driving Expedition, 486
Bee-house, Keeping Bees in a, 94, 366.
Bee Journal as an Advertising Medium, 429
Bee-keeper's Guide Book (new edition), 241
Bee-keeping and Rural Industries, 18 44
Bee-keeping as a Livelihood, 347, 367
Bee-keeping as it Ought to be, 213
Bee-keeping for Women, 72, 126, 168
Bee-keeping in Other Countries, 171, 181, 191
Bee-keeping in Schools, 72
Bee-keeping in Algeria, 21; in Belgium, 181; in British Columbia, 453; in China, 449, 502; in Cornwall, 136; in East Africa, 228, 237; in France 172, 211; in Germany, 191; in Italy, 192; in Japan, 5; in Java, 465; in Kashmir, 27, 507, 512, in Michigan, 216, 405; in New Zealand, 238, 316; in St. Helena, 284; in Switzerland, 182
Bee-keeping on the Cinema, 40, 68, 224, 276, 341, 388, 409, 470
Bee-life, Interesting Pictures of, 214
Bee Notes from Chesterfield, 276
Bee Notes from Derbyshire, 225
Bee Parasites, 407
Bee Shed, Making a, 42
BEE SHOWS TO COME :—139, 159, 169, 179, 189, 199, 209, 219, 239, 249, 259, 268, 278, 289, 299, 308, 318, 328, 338, 349, 368, 379, 389, 399, 419, 429
Bee Stings, Effect of, 277, 402, 438, 458; New Use for, 425; Preventing, 229; Remedy for, 39, 297
Bee Superstition, A, 236
Bee Work in Kashmir, 507
Bees and Death's Head Moth, 502
Bees and Fertilization of Fruit, 93
Bees and Neighbours, 79, 148
Bees and Snakes, 337, 397
Bees at the Moors, 448
Bees Building in Candybox, 108
Bees by Parcels Post, 128
Bees by Rail, Sending, 98, 148, 157, 202
Bees, Carniolan, 59, 455
Bees Casting Out Brood, 256, 258
Bees Collecting Honey-dew, 286
Bees, Driving, 219, 266, 486
Bees, Dysenteric, 59
Bee, Enemies of, 4, 85, 107, 145, 247
Bees, Flight of, 32, 44, 54, 59, 78, 84, 126
Bees for Travelling, Packing, 202
Bees, Foreign, 356, 364
Bees, Fruit-spraying and, 235
Bees in a Roof, Destroying, 417, 428, 460 489
Bees in a Ventilator 208
Bees in Observatory Hive, 408
Bees in Rhodesia, 334, 488
Bees, Long-lived, 87
Bees, Moving, 129, 167, 407, 408
Bees, Non-swarming, 255
Bees on the Farm, 175, 196, 207, 217
Bees Refusing Food, 418
Bees, Removing from a Wall, 48, 129
Bees Removing from Tree, 317, 326, 347, 488
Bees, Slugs and, 247
Bees, Strange Behaviour of, 135, 178
Bees, Subduing, 9
Bees, Transferring, 69, 80, 237, 297, 327, 338, 367, 469
Bees, Uniting, 179, 341, 418
Bees Working through Super-clearer, 386
Bee Takes a Cruise, A, 375
Bee Tent Lectures, 415, 433, 468
Bee, The, 139
Bee Veils, 46, 127, 134
Bee with One Antenna, 414
Beginner's Difficulties, A, 256
Beginner's Interesting Experience, 374

Beginners' Queries, 118, 138, 188, 288, 347, 368, 377, 480
Belgium, Bee-keeping in, 181
Berkshire B.K.A., 145
Best Hive and Strain of Bees, 38
Big Bee-keepers' Opposition to Legislation, 291
Biography, An Interesting, 128
Birds and Bees, 107
Bleaching Bees-wax, 170
Blurts from a Scratchy Pen, 7, 25, 43, 66, 86, 115, 147, 165, 204, 303, 321, 363, 434, 496
Bottom Ventilation, 316
Box Border and Bees, 257
Box Hives, 167
Brace Combs, 357
Breeding by Selection, 92
Brief Reports, 387, 406, 417, 429, 439, 450
British Columbia, Bee-keeping in, 453
British Columbia, Foul Brood Act in, 377
British Hives in South Africa, 207
Brood Chamber, Doubling the, 113
Brood in November, 500
Brood Nest Full of Stores, 399
Bubble burst, A, 384
Burial in a Bee Garden, 10

Cane and Beet Sugar, 510
Canada, Foul Brood Legislation in, 3, 36, 294
Candied Honey, Removing from Combs, 169, 199
Candy-making, 48
Cappings, Perforated, 250
Carniolan Bees, 59, 455
Ceylon, Bees in, 398
Chance for a Bee-keeper, 145, 160
Chili, Honey and Wax in, 432
China, Keeping Bees in, 449, 502
Cinematograph and Bee-keeping, 40, 68, 224, 276, 341, 388, 409, 470
Claustral Hive, Making a, 38
Claustral Hive, New Use for, 366
Cleaning Combs in the Open Air, 469, 476
Cleaning Floor-boards, 252
Cleaning the Extractor, 288, 338
Cleaning Wet Combs, 327 409
Clipping Queen's Wings, 256, 356
Clover and Bees, 257, 514
Comb-building in December, 33, 54
Comb Capacity, 195
Combs, New versus Old, 428
Combs, Renewing 218
Combs, Well-built, 217, 429
Compound Eye of the Bee, 6, 7, 9 36, 54
Condemned Bees, Destroying, 289, 321, 346, 363, 374, 385, 407, 466
Conversazione of B.B.K.A., 145, 151, 161, 171, 181, 191, 412, 441, 461, 471, 481
Co-operation and Marketing in Ireland, 325
Co-operation in America 345
Cornwall, Notes from, 136
Correction and Encouragement, 184
Cotswold Bee-keeper, A, 74
Cottager's Experience with Bees, 343
Creosote for Uniting, 489
Cures, So-called, 3, 37, 45, 54, 75
Curious Observatory Hive, 84, 325

Dairy Show, The, 431
Dealing with "Isle of Wight" Disease, 245, 246
Dealing with Vicious Bees, 263, 318
Dealing with Weak Stocks, 418
Death of Lord Avebury, 221; Mr. F. H. Fisher, 154; Mr. C. L. Neave, 68; Sir Charles Skelton, 419; Mr. C. N. White, 502
Death's Head Moth, 502
Delusions about Bees, 17, 22, 55
Density of Honey, Finding, 62
Deposit System, The, 10
Depth of Frames, 47
Derbyshire, Bee Notes from, 225, 323, 343, 406, 499
Derwent Notes, 76
Deserted Hive, A, 490
Destroying Bees in a Roof, 417, 428, 460, 489
Destroying Condemned Bees, 289, 321, 346, 363, 374, 385, 407, 466
Destroying Diseased Stocks, 287, 317
Difficulty with Non-standard Hive, 188
Diseased Bees, Traffic in, 291
Disease, Immunity from, 2, 24
Disease, Preventing, 235, 252
Disease, Sunshine and, 217
Disease, Treating, 317
Disinfecting Hive, 479
Disinfection Spring, 79
Do Bees Pay? 324, 364
Do Bees Reason? 428
Doolittle's Dummies, 345, 393
Doubling Stocks, 148, 169
Doubling the Brood-chamber, 113
Drifting Bees, 207
Driven Bees, Feeding, 346
Driving Bees 219, 266, 486
Driving Bees from a Barrel, 277
Driving Vicious Bees, 264
Drone-rearing, Preventing, 208, 248, 287
Drones in January, 44
Drones in October, 440, 469
Drones, Late, 500
Drones, Too Many, 237, 249
Drones, Useless, 478
Drug Treatment for "Isle of Wight" Disease, 164
Dumbarton, Bee Notes from, 477
Durham, Report from, 463
Duties of an Expert on Tour, 392, 402, 414, 423, 439, 446, 456, 459, 476
Dwindling Stock, 267
Dysentery, 445
Dysenteric Bees, 89

Early Pollen, 68
Early Queen-raising, 149
Early Queen Wasps, 108
Early Swarms, 187, 206
Early Winter, An, 365
East Africa, Bees in, 228, 237
Education and Rural Industries, 18
Effect of Bee-stings, 277, 402, 438
Eggs in Cell, Several, 227
Embedder, Heating the, 18, 117, 159
Empty Racks Over or Under, 316
English Bees in Madeira, 179
Enemies of Bees, 4, 85, 107, 145, 247
Escape Screen, 465
Etymological not Entomological, 156, 165, 197
Evenly-built Combs, 217
Excessive Swarming, 79
Experimental Apiary in Paris, 211
Experts and Disease, 159
Expert on Tour, Duties of an, 392, 402, 414, 423, 439, 446, 456, 459, 476
Expert on Tour, Notes from, 205
Expert's Tour in Northumberland, 506
Extractor, Cleaning the, 288, 338
Extractors, Foot-power, 479
Extractor, How to Make an, 163, 184
Extractor, The Gift, 359
Extraordinary Honey Yield, 307
Eye of the Bee, Compound, 6, 7, 9, 36, 54

Failing Queen, A, 256
Fancy Sections, 345
Farmers and Bees, 175, 196 207, 217
Feeders and Feeding, 366, 498
Feeders, Slow, 373, 385, 386, 395, 396, 406 439, 478, 498
Feeding Bees in Skep, 69
Feeding Driven Bees, 346
Feeding for Winter, 377
Feminine Monarchie, The, 219
Fertilization of Fruit by Bees, 93
Fertilization of Queen Bees, 484
Fitting and Wiring Frames, 222, 232, 242, 266
Fixed Comb Hives, 416
Fixing Tool-handles, 10
Flight of Bees, The, 32, 44, 54, 59, 78, 84, 126
Floor-boards, Cleaning, 252
Fool-proof Skep, The, 459
Foot-power Extractors, 479
Forcing Bees into Sections, 281
Foreign Bees, 356
Foreign versus Native Bees, 364
Foul Brood Act of British Columbia, 377
Foul Brood Legislation in Canada, 3, 36, 294; in United States, 307
Foul Brood in Italy, 489
Foul Brood Odour, 128
Foundation, 39, 47
Foundation, Wiring in, 205
Frame-pliers, 465
Frames, Depth of, 47
Frames, Spacing, 150
Frames, Wiring, 222, 232, 242, 266
France, Bee-keeping in, 172
From an Ancient Bee-book, 226
Fruit-spraying and Bees, 235

Germany, Bee-keeping in, 191, 501
Germany, Number of Hives in, 452
Germicides, Futility of, 45, 54, 67, 97, 98
Gloucestershire B.K.A., 490
Good Report, A 205
Good Suggestion, A, 116, 123
Gorse as Honey-plant, 9
Granulating Comb Honey, 499
Greek Bee Hive, The, 139
Grouping Hives for Wintering, 76

Hail, Smiling May! 217
Heard at Altrincham Show, 406
Heather and Frost, 398
Heather Honey, 424
Heather Honey as Winter Food, 406
Heather Honey, Working for, 168
Heather, Strengthening for the, 59, 76
Heating the Embedder, 18, 117 159
Heredity in Bees, 425
Hive, The Combination, 126
Hive, The Conqueror, 127
Hive Entrances, 55
Hive, Making a Claustral, 38
Hive Stands, 205, 391
Hive, Stocking Observatory, 38
Hive, The W.B.C., 127
Hive Ventilation, 65, 98, 317
Hives, Making Paint for, 59
Hives, Sheltering, 112
Hives, Single-walled, 118, 159
Hives, Types of, 118, 126 167
Hiving a Swarm, 298, 346
Home-made Slow Feeder, 396, 439
Homes of the Honey Bee, 19, 49, 73, 124, 268, 292, 302, 474
Honey and Pollen, 487
Honey Bee, Natural History of the, 130
Honey Buyers? Dishonest, 457
Honey-dew, Bees Collecting, 286
Honey, Finding Density of, 62
Honey from Diseased Stock, 89
Honey Harvest, Poor, 432
Honey Imports, Total for 1912, 38
Honey Imports for December, 1912, 21; January, 68; February, 112; March, 154; April, 195; May, 248; June, 281; July, 321; August, 372; September, 412; October, 453; November, 505
Honey-jar Stand, 186
Honey Judging, 374, 384, 385, 397, 403, 442, 451, 459, 461, 487
Honey, Marketing, 463, 471, 506
Honey Petrified, 39, 78
Honey Plant Gorse as a, 9
Honey Prices, 493
Honey Season for 1913, 412
Honey Secretion and Weather, 407
Honey Selling, 29
Honey Show Season, The, 351
Honey, South African, 167
Honey Star, The, 83
Honey Strainer, New, 88
Honey Toffee, 108
Honey, Value of, 195
Honey Yield for 1912, 119
Honey Yields, Extraordinary, 307
House-apiaries, For and Against, 196
How are Stores? 155, 165
How Bees Defend Themselves, 502
How Does a Bee Find Nectar? 198

How Far Bees Fly, 478
How Humble Bees Collect Pollen, 235
How Pollen is Gathered, 34, 78
How to Destroy Condemned Bees, 289, 321, 346, 363, 374, 385, 407, 466
How to Make an Extractor, 163, 184
How to Make a Smoker, 103, 122
How to Recognise Old Bees, 63
How to Ventilate Hives, 276
Humble Bees and Wasps, 145

Illustrations in the Honey Bee, 80
Illustrations, Practical, 333
Immature Brood Cast Out, 256, 258
Immunity from Disease, 2, 24
Increase and Surplus, Working for, 199
Increase, Artificial, 231, 241, 275, 287
Increase, Making, 189, 254, 255
Increase, Preventing, 254, 255, 257, 316
Increasing Stocks by Dividing, 137
Indiscriminate Tasting of Exhibits, 326
Infectious Paralysis, 22, 36, 67, 97, 123
Inferior Honey Utilising, 348
Infuriated Bees, 278
Instruction in Bee-keeping, Obtaining, 433, 457
Inspector to See You The, 34
Inspection of Apiaries, 88
Insurance, 89
Insurance, Swiss Foul Brood, 111
Insuring an Apiary, 69
Interesting Evening with the Bees, An, 470
Interesting Meeting, An, 411
Interesting Old Bee-book, An, 136
Interesting Old Bee-hive, An, 344
Interesting Pictures of Bee-life, 214
Introducing Queens, 373
Ireland, Co-operation and Marketing in, 325
Irregular Brood-combs, Removing, 179
Irregular Combs, 138, 179
Isle of Man, Bee-keeping in, 103
"Isle of Wight" Disease," 30, 75, 123, 186, 205, 217, 225, 227, 246, 266, 274, 343, 367, 436
"Isle of Wight" Disease and Drug Treatment, 164; and Honey, 246; and Sugar Feeding, 448; and Vagrant Bees, 257; Antiseptics for, 285; Cures for, 75, 355; Dealing with, 245, 246, 354, 366, 366, 437; Experience with, 294, 425; How Spread, 225; Kentish Cure for, 233 252, 265, 275, 285; Quinine for, 275, 336, 437 448 468; Remedy for, 238, 254, 327; Symptoms of, 227
"Isle of Wight," Report from, 26
Is "Isle of Wight" Disease Contagious? 414, 426
Is Spring Dwindling Fatal? 499, 512
Italy, Bee-keeping in, 192
Italy, Foul Brood in, 489

Japan, Bee-keeping in, 5, 6
Japanese Apiary, A, 36
Java, Bees in, 465
Judging Honey 374, 384, 385, 397, 403, 442, 451, 459, 461, 487, 497
Judging Sections, 376, 505
Juvenile Bee-keepers, Classes for, 44, 72

Kashmir, Bees in, 27, 507, 512
Keeping Bee Accounts, 434, 489
Keeping Bees in a Bee House, 94
Keeping Spare Queen through Winter, 408
Keeping Wasps Out, 395
Kentish Cure for "Isle of Wight" Disease, 233, 252, 265, 275, 283
Kill or Cure, 15, 47, 84, 85, 113
King of Uganda and Bee Pictures 291

Lady Bee-keeper's Queries, 79
Lanarkshire, Season in, 226, 252, 286
Lancashire Agricultural Show, 251
Lazy Bees, 308
Lecture B.B.K.A., 396
Lecture at Barnet, 262; at Chelmsford, 388; at Croydon, 281; in Gloucester, 490
Lectures in the Bee Tent, 415, 433, 458
Lecturers, Qualifications of, 447
Legislation in Australia, 334
Legislation in Canada, 3, 36, 294
Legislation for Disease, 121, 128, 133, 295
Legislation, Opposition to, 291
Longevity in Bees, 87, 478
Losses from Bee Disease, 226
Lost Stock, A, 99, 108
Lysol for Bee Disease, 326, 376, 386

Macdonald, Mr. D. M., 133
Madeira, English Bees in, 179
Making Increase, 189, 254, 255
Marketing Honey, 463, 471, 506
Marketing Honey in Ireland, 325
Mating Queens, 35
Mead, 140
Measuring Pollen Grains, 96
Michigan, Bee Notes from, 216, 405
Michigan Foul Brood Bill, 307
Microscopic Measurement, 126
Microscopic Slides of *Nosema apis*, 286
Mildness of the Winter, 458
Misleading Reports, 157
Mites in Queen Cells, 150
Model Apiary, A, 353
Moderate Stocks in Short Honey-flow, 16
Moving Bees, 129, 167, 407 408
My Relations with Darwin, 496

Native Bee-keeping in East Africa, 227, 237
Natural History of the Honey Bee 143, 151
Nectar, How Does a Bee Find, 198
NECTAR PRODUCING PLANTS AND THEIR POLLEN. By Geo. Hayes:—Buckwheat, 492; Furse, Gorse, or Whin 352; How to Study Pollen Grains, 11, 31, 52, 82; Snowdrop, 312; Strawberry, 114
Nectar Secretion, 298
Need for Bee Inspector, 166
Neighbours and Bees, 79, 148
NEW BEE-KEEPERS' ASSOCIATIONS:—Bridgnorth and District, 291; Isle of Man, 103; Richmond and District, 231; Sheffield, 57, 78; South Staffs, 123
New Edition of Bee-keepers' Guide Book, 241
New Flight Theory, 84
New Honey-strainer, 88
New versus Old Combs, 428
New Zealand, Bee-keeping in, 10, 238, 316, 389
New Zealand versus British Bee-Keeping, 485
No-bee-way Sections, 363
Non-painted Hives, 307
Non-standard Hive, Difficulty with, 188, 347, 398
Non-swarming Bees, 235, 318
Northumberland, Bees in, 291, 435
Nosema Apis and Mr. Heap, 67, 97
Notes By the Way, 176
Notes from Allanvale, 106
Notes from an Expert on Tour, 205
Notes from an Irish Reader, 275
Notes from Cornwall, 136
Notes from Derbyshire, 225, 323, 343, 405
Notes from Yorkshire, 176
NOTICES TO CORRESPONDENTS: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 109, 119, 130, 139, 150, 160, 169, 179, 189, 199, 209, 219, 229, 239, 249, 259, 269 279 289, 299, 309, 319, 329 339, 349, 359, 369, 379, 389, 399, 409, 419, 429 440, 450, 460, 470, 480, 490, 500, 510
NOVELTIES FOR 1913: Combined Slow and Rapid Feeder, 89; Hampton Uncapping Knife, 137; Hill's Queen Catcher, 149; Honey-jar Stand, 168; Roberts's Section-wrapper, 188
Novice's Successful Season, A, 364
Nucleus Swarming, 344
Nyasa Bee, The, 57, 63, 296, 348

OBITUARY: Lord Avebury, 221; Mr. T. H. Fisher, 134; Mr. C. L. Neave, 68; Mr. C. N. White, 502
Observatory Hive, Ancient, 305
Observatory Hive, Bees in, 408
Observatory Hive, Curious, 84, 325
Observatory Hive, Stocking an, 38
Obtaining Instruction in Bee-keeping, 433, 457
Old Bee-books, 86, 115, 136, 139, 147, 204, 226
Old Bee Journalism, 8, 28 43
Old Bees, How to Recognise, 63
Old Fashioned Teaching, 258
Old Foundation, Using, 368
Out Apiaries, 207
Over Ventilation, 47
Ownership of Swarms, 80, 227, 298, 485

Packing Bees for Travelling, 202
Painting Roofs Inside, 107
Paint for Hives, Making, 39
Paralysis, Infectious, 22, 36, 67, 96, 123
Parasites in Combs, 48
Pasteurisation of Honey, 465
Perforated Cappings, 250
Plea for the Skep, A, 235 266
Poisonous Honey, Alleged, 358
Pollen and Honey, 487
Pollen-clogged Combs, 367
Pollen, Colour of, 21, 33
Pollen, Early, 68
Pollen Grains, How to Study, 11, 31, 52, 82, 96
Pollen Grains, Nature of, 48
Pollen, How Gathered, 34, 78
Pollen, How Humble Bees Collect, 235
Pollen-mite, 48
Pollen, Unhealthy, 26
Pollination, 205
Popularising Honey, 165
Practical Illustrations, 333
PRESS CUTTINGS: Banker and Bee-keeper, 258; New Zealand Honey for England, 10; Petrified Honey, 39; The Latest from the Hives, 229; Tits Nesting in Bee-hive, 19; What Bees See, 10
Preventing Bee-stings, 229
Preventing Drone-rearing, 208, 248, 287
Preventing Disease, 235, 252
Preventing Increase, 254, 255, 257, 316
Preventing Swarming, 168, 288
Problem of Selection, The, 126
Propolis, Removing, 47, 78, 440
Purchasing Swarms, 60
Putting Stocks into Bee-house, 367

Qualifications of Lecturers, 447
Quantity of Nectar per Flower, 178
Queen, Appearance of, 178
Queen Bees, Fertilization of, 484
Queen-breeding by Selection, 93
Queen Ceasing to Lay, 408
Queen Failing, 256
Queen Flying during Manipulation, 368
Queen Introduction, Unfortunate, 249
Queen-mating in October, 470
Queenlessness, Suspected, 150, 282
Queen-raising, Early, 149
Queen Wasps, Early, 108
Queens and Queen-mating, 108
Queens, Distinguishing Virgin, 63
Queens, Distinguishing Young and Old, 63
Queens for Increase, 373, 385
Queens, Introducing and Rearing, 373
Queens, Laying, 248
Queens, Mating, 35
Queens, Superfluity of, 234
Queens, Unfertile, 317

Queens, Where to Rear, 503, 512
Queens, Value of, 46
Queens Wings, Clipping, 256, 356
Quilts, Lack of, 187
Quinine for "Isle of Wight" Disease, 275, 336, 437, 448, 468
Quis Custodiet? 158
Quod hoc Sibivult, 456

Races of Bees, 24
Rail, Sending Bees by, 98, 148, 157, 202
Rats and Combs, 404
Ravages of Wax-moth 8, 29, 116
Rearing Queens, 373, 512
Recipe for Honey Tonic, 108
Re-combing Stocks in Frame-hives, 277
Red Clover Bees, 307
Remedy for Bee-stings, 39, 297
Remedy for "Isle of Wight" Disease, 238, 254
Removing Bees from Tree, 317, 326, 347, 488
Removing Bees from Ventilator, 208
Removing Bees from a Wall, 48, 129
Reminiscences of a Cotswold Bee-keeper, 74
Removing Irregular Brood-combs, 179
Removing Propolis, 47, 48
Removing Supers at Out-apiary, 99
Renewing Combs, 218, 277
Report from Isle of Wight, 26
Re-queening, 227, 314, 318, 416
Re-queening and Increase, 469
Rhodesia Bees in, 334 488
Ridding Combs of Waxmoth, 510
Richmond and District B.K.A., 231, 332, 427
Rightful Lawlessness, 187
Robbing, Ayles' Cure and, 448
Robbing Disinfected Hives, 328
Robbing in Spring, 99
Robbing, Strange Way of Stopping 30
Ross-shire Notes. By J. M. Ellis. 95, 216 264, 363, 424
Runaway Swarms, A Year of, 284
Rural Industries, Bee-keeping and, 18, 44

Scandalous Bee-keeping, 205
Schoolmaster Abroad, The, 427
Scottish Bee-keepers' Report, 355
Season in Lanarkshire, 226 252, 286
Season Up to Date, The, 333
Secretion of Nectar, 298
Section Exhibits, 333
Selecting a Good Queen, 127
Selection Breeding by, 92, 126
Selling Honey, 29
Selling Sections, 404
Sending Bees by Rail, 98, 148, 157, 202
September Swarm, A, 396
Several Eggs in Cell, 227
Shelter, Effects of, 306
Sheltering Hives, 112
Sheffield B.K.A., 57, 78
Sheppard, Mr. W. J., 372
Shropshire B.K.A., 284
Signs of Queenlessness 282
Simple System of Keeping Bee Accounts, 434
Single-walled Hives, 118, 159
Site of Apiary, Changing, 129
Skep, One Word for the 364, 387 404, 416, 422, 438, 447, 504
Skep, Plea for the, 235, 266, 338, 376
Skeppist, A Successful, 395, 439
Skeps or Frame Hives, 498
Slow Feeders, 373, 385 386, 395, 396 406, 439, 478
Slugs and Bees, 85, 247
Smoker Fuel, 130
Smoker, How to Make a, 103, 122
Smoker, The, 13
Smokers, Hints on, 333, 376
Snakes, Bees and, 337, 397
So-called Cures 3, 37, 45, 54, 75
Soft Candy, Making, 377
Solar Wax-extractor, 39
Song of the Bees, 89
South Africa, British Hives in, 207
South African Honey, 167
South Staffords. B.K.A., 125
Sowing Clover for Bees, 257
Spacing Frames, 130
Spacing Super-combs, 328
Special Lectures, 479, 505
Spiracles of the Honey Bee, 13, 42, 59, 74, 156
Spraying Vicious Bees, 264
Spreading Disease, 413
Spring Cleaning, 288
Spring Disinfection 79
Spring Dwindling, 499
Spring Dwindling, Curing, 46
Spring Food for Bees, 209
Spring Packing, 155
Spring Pollen, Artificial, 155
Stapleton on "Isle of Wight" Disease, Mr., 247
Starting Bee-keeping, 308, 367
Step in the Right Direction, A, 231
St. Helena, Bees in, 284
Stingless Bees, 329, 357
Stings, Effect of, 277, 402, 438, 458, 489
Stings, Remedy for, 39
Stock Dwindling, 267
Stocks, Doubling, 148, 169
Stores, See to the, 165
Strengthening for the Heather, 59 76
Strange Behaviour of Bees, 135, 178
Studying Bee-keeping, 357
Subduing Bees, 9
Suffolk B.K.A., The, 421
Sugar as a Food for Bees, 167
Sugar, Cane and Beet, 510
Sugar Feeding, 478
Sugar Feeding and "Isle of Wight" Disease, 448
Suggestions, Good, 116, 123
Sunshine and Disease, 217
Superfluous Drones, 249
Superfluity of Queens, 234
Supers in Hot Weather, 252
Supers on in September, 346
Surplus, Working for, 159, 278
Survival of the Fittest, 77
Suspected Queenlessness, 150
Swarm Catchers, 60, 109
Swarm Control, 424
Swarm Issuing before Queen-cells are Sealed, 277
Swarm in a Skep, Keeping a, 328
Swarm Worth Hiving, 204
Swarming, 315
Swarming, Checking, 306
Swarming Difficulties, 256
Swarming, Excessive, 79
Swarming, Preventing, 168, 288
Swarming Vagaries, 218, 253, 266
Swarms, Artificial, 273
Swarms, Dealing with, 277
Swarms, Early 206
Swarms, Hiving 298, 346
Swarms, Ownership of, 80, 227, 298, 485
Swarms, Purchasing, 60
Swiss Apiary, A, 474
Swiss Bees, 479
Swiss Foul Brood Insurance, 111
Switzerland, Bee-keeping in, 182
Switzerland, Meeting of Bee-keepers 411
Syrup-making in Copper Boiler, 346

Tasting Exhibits at Shows, 326
Telling the Bees, 99, 107
Texas Bee Diseases Act, 345
Time before Queens Begin to Lay, 218, 243
"Tips" for Bee-keepers, 404
Tool Handles, Fixing, 10
Too Many Drones, 237
To Our Readers, 329
Total Honey Imports for 1912, 38
Trade Catalogues Received, 109, 119, 129, 149, 179, 189, 209, 239
Traffic in Diseased Bees, 291
Transferring Bees, 69, 80, 237, 297, 327, 338, 469
Transferring Bees to Frame Hives, 80, 99, 327, 367
Twelve-frame Hives, 128
Typical Bee-keepers, 428

Unfertile Queens, 317
Unfortunate Queen Introduction, 249
Unhealthy Pollen, 26
Unknown Sense, An, 107, 158
Uniting Bees, 179, 341, 418
Uniting, Creosote for, 489
Uniting for the Moors, 328
Uniting Swarm to Weak Stock, 248
Useful Appliances, 414
Useless Drones, 478
Using Apicure, 278, 328, 375
U.S.A. Foul Brood Legislation, 307
Utility and Veracity in Bee Tent Demonstration, 415, 433
Utilising Inferior Honey, 438

Vagaries of Swarms, 218, 253
Vagrant Bees and "Isle of Wight" Disease, 257
Value of Honey, 195
Various Queries, 267
Variations in Foundation, 39
Ventilating Hives, 65, 98, 276, 317
Ventilating by Raising Brood-chamber, 169
Ventilation, Over, 47
Veils, 46, 127, 134
Vicious Bees, Dealing with, 255, 318
Vicious Bees, Removing Supers from, 376
Vigorous Stock, A, 37
Virgin Queens, How to Distinguish, 63
Visit of B.B.K.A. Representatives to Paris, 211
Volume Forty-one, 1

Wanted, a Bee-keeper, 36
Water Fountain for Bees, 440
Water in Spring, 154, 198
Wasps, 29, 145, 166, 395
Wasps and "Isle of Wight" Disease, 458
Wax-extractors, 13
Wax-extractor, Solar, 39
Wax-moth, Ravages of, 8 29, 116
Wax-moth, Ridding Combs of, 510
Wax-moth in India, 512
Wax Scales, 282, 317
W. Broughton-Carr Memorial Fund, 491
Weak Stocks, Dealing with, 186, 418
Weather and Honey Secretion, 407
Weather of 1912, 11
Weather Report for 1912, 20
Weather Reports: 20, 70 129, 149, 209, 239 304 349, 379, 418, 489, 500
Well-built Combs, 429
Wells' Perforated Dividers, 398
Wet Combs, Cleaning, 327, 409
What Was the Fever? 157
Where Bees Pay, 206, 248
Which Hive has Swarmed, Finding, 266
Why are Stocks Weak? 186
Why should Bee-keepers Re-queen? 314
Winter Brood-nest, Arrangement of, 413
Winter Feeding, 337
Winter Stores, Artificial, 199
Wintering Bees, 76, 404
Wintering Safe, 87, 88
Wire Fences, 466
Wiring Frames, 203, 222, 232, 242
Women, Bee-keeping for, 126, 128
Wooden Receptacles for Honey, 479
Worker Comb, 483
Worker, Life of, 10
Working for Heather Honey, 168
Working Sections without Excluder, 399
Working for Surplus, 150, 199, 278

Year of Runaway Swarms, 284
Yorkshire Notes, 176

LIST OF CONTRIBUTORS.

Anderson, J. Stornoway, 16

Betts, Annie D., Camberley, 33, 96
Bocock, Chas. H., Newmarket, 156, 197, 286
Bovell, H. H., 286
Bowen, A. H., Cheltenham, 384, 404 476
Brook, H. H., Altrincham, 24, 93. 118, 126
Bull, F., 396

Campbell, H., Pulham-St.-Mary, 326, 374, 395, 448
Carver, W. A., 506
Crawshaw, L. S., 8, 36, 59, 78, 98, 126, 178, 198, 217, 248, 266, 287, 316, 338, 356, 375, 397, 416, 438, 458, 489, 509

Deane, Harold, 358, 386, 448
Desmond, G. G., 7, 97, 157, 205, 284, 365, 387, 395, 426, 487, 499
Denss, L. W. J., Nyasaland, 57, 63, 296, 348
Durham, Florence M., 425

Ellis, J. M., Ussie Valley, 96, 216, 264, 363, 424
Ewell, E., Michigan, 216, 405

Farmer, W. J., 136
Flashman, G. J., 44, 363, 433
Forse, Claude R., 56

Hadlow, F. V. Buxted, 327, 386
Hamshar, A. W., 85, 294, 364, 404, 498
Harper, F. W., 214, 255, 374, 457
Hayes, George, 11, 31, 52, 82, 114, 165 312, 362, 492, 505
Heap, Chas. H., 28, 45, 54, 75, 116, 123, 186, 291, 337, 414, 422
Herrod, W., 13, 42, 62, 103, 122, 136, 162, 184, 202, 222, 232, 242, 273, 321, 341, 494
Herrod, J., 457
Hopkins, Isaac, Auckland, 485
"Humble Bee," Allan Vale, 106, 145

James, J. E., Pontardulais, 254
Jannings, Rev. F. S. F., 18, 226, 252
Judge, G. W., 84

Kendal, Rev. I., Rhodesia, 334
Kidd, J. N., 16, 225, 274, 315

Lawton, J. S., 374, 387, 417, 487
Lee, James, 245, 252
Litman, R., 405, 407
Long, A. L. N., 396

Mace, Herbert, 15, 84, 165, 196, 265, 285, 354, 385, 447
Macdonald, D. M., 2, 21, 46, 53, 72, 87, 92, 112, 127, 134, 154, 167, 175, 195, 206, 213, 231, 241, 254, 263, 281, 305, 314, 333, 344, 351, 372, 384, 387, 391, 412, 428, 445, 465, 478, 483, 503, 513
MacCullah, A., 325
Martin, W., 235
Mason, G., 54
Mason, J. W., Withernsea, 455
Maxwell, Major J. W., 386
Menzies, H. J., 463, 471
Meyer, J. H., 365
Moir, J. W., 35, 54, 448
Munro, W., Dundee, 437

"Nemo," 432, 464, 501
Neve, Dr. E. F. Kashmir, 27, 507, 512

Oldham, H., Rhodesia, 488

Pearman, J., Derby, 226, 326, 397, 506
Pears, W., Blanchland, 76
Pettit, Morley, Ontario, 3, 294
Pinder, J. E., 135
Price, Joseph, 44, 67, 123, 205, 506

Sheppard, W. J., 302
Schroder, Alex., 5
Simmins, Samuel, 22, 34, 67, 97
Sitwell, Captain F., 252, 497
"S. J.," Gloucester, 447
Sleight, Tom, 343, 436
Smallwood, J. N., 7, 25, 43, 66, 83, 86, 115, 147, 165, 204, 303, 324, 363, 434, 496, 506
Staffordshire Bee-keeper, 26, 77
Stapleton, T., 247
Steventon, G., 484

Todd, F., Dundas, 453

Vyner, H. S., 65
Wakerell, A. W., 116
Walker, Lieut.-Colonel H. J. C., 15, 42, 74 156 325, 392, 402, 446, 476
W. C. B. (Blantyre), 252, 355, 448
Wigley, H., 164, 219, 233, 283, 316, 426, 437, 466
Wilson, D., 32, 225, 323, 406
Woodley, W., 176
Wooldridge, F., 36
Woolley, F., 177

ILLUSTRATIONS.

Ancient Greek Bee-hive, 139
An Ideal Bee-dress for Woman, 495
Apiary at Malmont, France, 172
Apiary of Madame Michel, 173
Apiary of M. Wathelet, 181
Apiary of Professor Hommel, 171
Appliance for Heating Embedder, 18

Bee-dress for Man, 494
Bee-dress for Woman, 495
Bee-house, 94
Bookstall at Royal Show, 314
Bottom Ventilation for Hives, 316
Bingham Smoker, 104

Combined Slow and Rapid Feeder, 89
Corner of My Apiary, 253
Curious Glass Hive, 85
Curious Old Bee-hives, 344
Curious Old Observatory Hive, 305

Effects of Wax-moth in Neglected Hive, 9
Eggs, Larvæ, and Imago of Bee, 214
Examining a Candidate, 263, 422

Foundation, 215

German Bee House, 191
Group of Bee-keepers at Le Châlet, Nyon, 411

"Hampton" Uncapping Knife, 137
Heather Surplus from Seven Hives, 125
Honey Jar Stand, 168
How to Make an Extractor, 163 164, 184, 185
How to Make a Smoker, 105, 106
Humble Bee Collecting Pollen, 235

Interested Audience at Bee Demonstration, 262
Interior of Bee-house, 95
Italian Apiary, 193
Italian Bee-house, 192

Japanese Apiary, 4, 6, 37
Japanese Bee-keeper Manipulating Modern Hive, 5
Judging Honey Exhibits, 261

Kashmir Bees, Combs Built by, 507, 508, 509, 513

Late Mr. W. Broughton-Carr, 492
Late Mr. C. N. White, 503

Making Artificial Swarms, 273, 274
Midsummer Day's Swarm, A, 335
Mr. F. Harper's Apiary, 215
M. Pierre Odier Filling Outside Feeder, 477

Nyasa Hive in a Tree, 64

Pollen of Buckwheat, 473
Pollen of Gorse, 362
Pollen of Snowdrop, 313
Pollen of Strawberry, 114

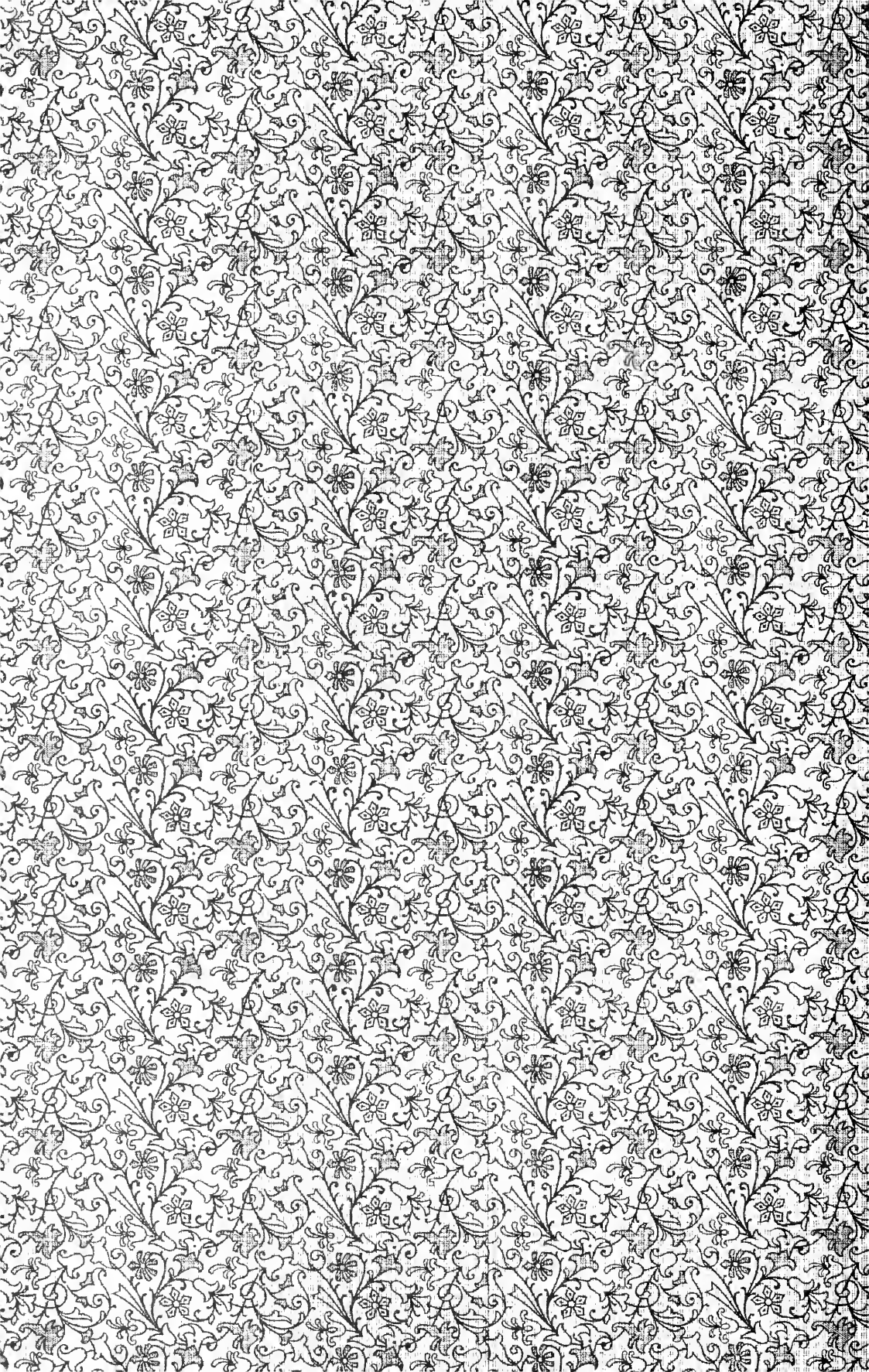
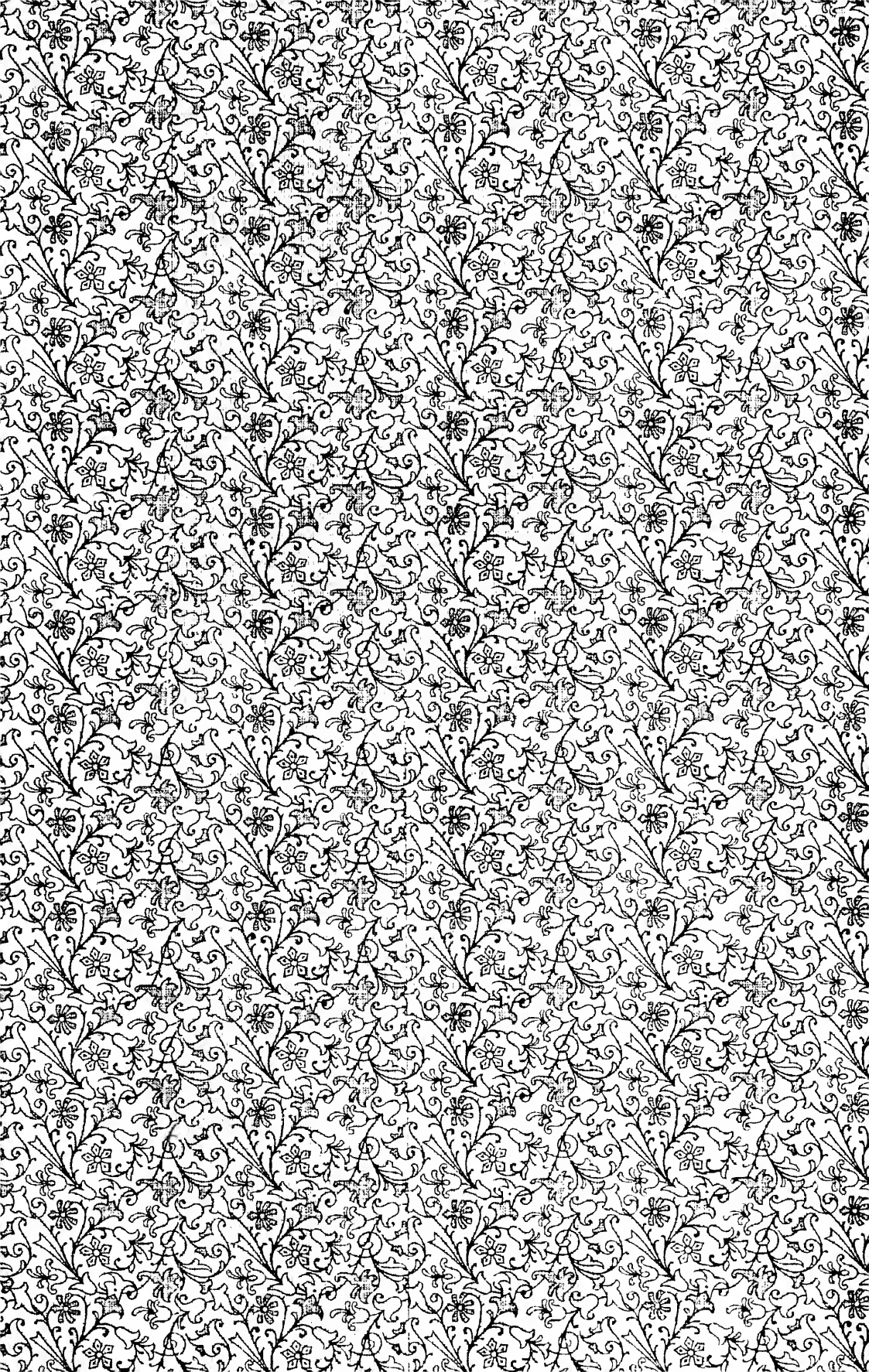
Queen and Bee-catcher, 149
Queen and Workers, 215
Queen Emerging from Cell, 214

Rev. E. Ewell's Michigan Apiaries 405
Robert's Section Wrapper, 189
Rusden's Hive, 86

Slaughter of the Drones, 215
Slow Feeders 466
Spiracles of the Honey Bee, 156
Starting on a Bee-driving Expedition, 486
Suffolk Bee-keepers, 421
Swiss Apiary, A, 475
Swiss Bee-house, 182

Travelling Box for Bees, 202

Uniting Bees, 302

Wiring and Fitting Frames, 223, 224, 233 242, 243, 244, 245
Wax Moth in India, 513

Homes of the Honey Bee:—
Apiary of Mr. F. Bird, Little Canfield, Essex, 49
Apiary of Mr. T. Gardner, Springfield Terrace, Gateshead, 124
Apiary of Mr. A. W. Grant, Corony Beg, Maughold, Isle of Man, 269
Apiary of Mr. H. Hulme, Quatford, Bridgnorth, 353
Apiary of Mr. F. E. Lennox-Brown, Little Coggeshall, Essex, 293
Apiary of Mr. P. Odier, Celigny, Switzerland, 475
Apiary of Mr. Chas. Smith, Wattisfield, Diss, 19
Apiary of Mr. W. J. Sheppard, Nelson, B.C., 303
Apiary of Mrs. A. N. Went, Riverside, St. Asyth, Colchester, 73